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Gamma-Rays of Radionuclides in Order of Increasing Energy

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GAMMA-RAYS OF RADIONUCLIDES IN ORDER OF INCREASING ENERGY

BY

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INTRODUCTION

THIS volume provides a list of the energies of gamma-rays emitted by radionuclides, arranged in order of increasing magnitude.

The compilation has been prepared particularly to assist in the identification and elucidation of gamma-scintillation spectra. All the quoted gamma energies have been taken from the *Table of Isotopes* of Strominger *et al.*[1]. The present work is merely a tabulation and should be used in conjunction with the scientific literature.

Although it has not been possible to include all the properties of each nuclide, an effort has been made to present such features as are likely to be of value to the user.

The present table encompasses the one presented in *Applied Gamma Spectrometry*, edited by Crouthamel[2]. For much further data on gamma spectrometry the reader is referred to Crouthamel's book, which also provides a catalogue of gamma-ray spectra. Other useful collections of standard γ-spectra have been provided by Salmon[3], Heath[4] and Anders[5].

In order to confirm the identification of gamma radiations of particular energy, it is often desirable to determine the rate of decay of the radiation. Half-lives are listed in the present work and Crouthamel[2] and Daniels[6] have provided useful tables of radionuclides arranged according to increasing half-life.

CLASSIFICATION OF ENTRIES

Photon-energy—

Gamma-ray energies (in Mev) are listed without qualification in the first column, and are preferred values taken from Strominger *et al.*[1]. For information on the methods of detection, decay schemes, etc., the user is referred to the *Table of Isotopes* and its bibliography.

Nuclide—

The second column lists the radionuclide which emits the gamma-ray listed in column one. Metastable excited states are denoted by the superscript ' m ' following the mass number, and for those cases in which two or more isomeric states are known, they are distinguished by the use of the superscript ' m_1 ', ' m_2 ', etc.

Half-life—

Half-life values are listed in column three. These may have been determined by direct measurements, delay coincidences, specific activities, yield experiments or genetic ' milking '. The values so listed are the ' best ' values selected by Strominger *et al.*[1].

Modes of formation—

The observed nuclear reactions (giving the target nuclide, projectile, and outgoing particle, in order) by which a radionuclide is formed are listed in column four (p = proton, n = neutron, α = alpha-particle, d = deuteron, t = triton, γ = gamma-ray or X-ray, β^- = electron, π = pi-meson, C = carbon ion). In those cases where a particular isotope is formed by the slow neutron fission of ^{235}U, the reaction is denoted by ^{235}U (n,f). These reactions have been taken from Hollander *et al.*[7], and the reader is referred to this work for further information.

Abundances of stable isotopes—

The relative abundances for the stable isotopes are given in column four, in accordance with the ' best values ' as listed in a report by K. T. Bainbridge and A. O. Nier[8], except where they are supplemented by more recent values. In the table these relative abundances refer to isotopic abundances of the target nuclide in the formation reaction.

In those cases where the target nuclide is radioactive, either artificially or naturally, this fact is denoted in the table by † (artificially active) and ‡ (naturally active) respectively.

Activation cross sections and fission yields—

Activation cross sections for thermal neutrons are listed in column six. The values given have been taken from *Neutron Cross Sections* by Hughes and Schwartz[9], and refer to thermal neutron activation cross sections of the target nuclide in the formation reaction. The cross sections are stated for a neutron velocity of 2200 m/s and, for a few cases in which the 2200 m/s value could not be determined, the cross sections have been included but are marked ' pile neutrons ' by means of an asterisk. Unless otherwise stated, cross sections are in barns.

Slow neutron fission yields for ^{235}U have been obtained from *The Radiochemistry of the Fission Products* by Coryell and Sugarman[10], and are expressed as a percentage of the total number of fissions which leads directly or indirectly to the nuclide listed in column two.

Abundances of gamma-rays—

The intensities of the gamma-rays listed in column one are given in column seven, and refer to the number of unconverted photons emitted per 100 disintegrations. Where an absolute abundance has not been determined, the relative unconverted photon abundances have often been measured, and for these relative abundances the reader is referred to Strominger *et al.*[1].

Genetic relationships—

Where the emitting nuclide in column two is the parent (P) or daughter (D) of a radionuclide, these are indicated in column eight. The listing of these parent–daughter relationships gives some warning to the user as to what he may expect in the way of radiation from a given isotope, since the radiation of a sufficiently short-lived daughter may also be observed with that of the parent.

ACKNOWLEDGMENTS

I AM particularly indebted to Dr. D. F. C. Morris for the generous help and constructive criticism which I received from him throughout the preparation of the work.

I also express my appreciation to Miss L. A. P. Robertshaw for her part in the writing of a large proportion of the manuscript.

TABLE OF THE ELEMENTS

ELEMENT names are arranged so that their chemical symbols are listed alphabetically. In this way, the user may quickly find the names of elements from their symbols in the book. Also shown are the elements' atomic numbers (Z).

Symbol	*Element*	*Atomic number*	*Symbol*	*Element*	*Atomic number*
Ar	Argon	18	I	Iodine	53
Ac	Actinium	89	In	Indium	49
Ag	Silver	47	Ir	Iridium	77
Al	Aluminium	13	K	Potassium	19
Am	Americium	95	Kr	Krypton	36
As	Arsenic	33	La	Lanthanum	57
At	Astatine	85	Li	Lithium	3
Au	Gold	79	Lu	Lutecium	71
B	Boron	5	Lw	Lawrencium	103
Ba	Barium	56	Mg	Magnesium	12
Be	Beryllium	4	Mn	Manganese	25
Bi	Bismuth	83	Mo	Molybdenum	42
Bk	Berkelium	97	Mv	Mendelevium	101
Br	Bromine	35	N	Nitrogen	7
C	Carbon	6	Na	Sodium	11
Ca	Calcium	20	Nb	Niobium	41
Cd	Cadmium	48	Nd	Neodymium	60
Ce	Cerium	58	Ne	Neon	10
Cf	Californium	98	Ni	Nickel	28
Cl	Chlorine	17	No	Nobelium	102
Cm	Curium	96	Np	Neptunium	93
Co	Cobalt	27	O	Oxygen	8
Cr	Chromium	24	Os	Osmium	76
Cs	Cesium	55	P	Phosphorus	15
Cu	Copper	29	Pa	Protoactinium	91
Dy	Dysprosium	66	Pb	Lead	82
E	Einsteinium	99	Pd	Palladium	46
Er	Erbium	68	Pm	Promethium	61
Eu	Europium	63	Po	Polonium	84
F	Fluorine	9	Pr	Praseodymium	59
Fe	Iron	26	Pt	Platinum	78
Fm	Fermium	100	Pu	Plutonium	94
Fr	Francium	87	Ra	Radium	88
Ga	Gallium	31	Rb	Rubidium	37
Gd	Gadolinium	64	Re	Rhenium	75
Ge	Germanium	32	Rh	Rhodium	45
H	Hydrogen	1	Rn	Radon	86
He	Helium	2	Ru	Ruthenium	44
Hf	Hafnium	72	S	Sulphur	16
Hg	Mercury	80	Sb	Antimony	51
Ho	Holmium	67	Sc	Scandium	21

Symbol	*Element*	*Atomic number*	*Symbol*	*Element*	*Atomic number*
Se	Selenium	34	Tl	Thallium	81
Si	Silicon	14	Tm	Thulium	69
Sm	Samarium	62	U	Uranium	92
Sn	Tin	50	V	Vanadium	23
Sr	Strontium	38	W	Tungsten	74
Ta	Tantalum	73	Xe	Xenon	54
Tb	Terbium	65	Y	Yttrium	39
Tc	Technetium	43	Yb	Ytterbium	70
Te	Tellurium	52	Zn	Zinc	30
Th	Thorium	90	Zr	Zirconium	40
Ti	Titanium	22			

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·000075	^{235m}U	26·5m					D^{239}Pu
0·003(?)	^{239}Pu	24360y	^{238}Pu (n,γ)	†	403 ± 10		D^{239}Np
			^{238}U $(\alpha,3n)$	99·276‡			P^{235m}U
0·0039	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·0051	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·0075	^{85m}Sr	70m	^{84}Sr (n,γ)	0·56	< 1		
			^{85}Rb (p,n)	72·15			
			^{85}Rb $(d,2n)$	72·15			
0·0084	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
~0·0084	^{169}Er	9·4d	^{168}Er (n,γ)	27·07	2·0 ± 0·4		
			^{170}Er (γ,n)	14·88			
0·0093	^{83m}Kr	114m	^{82}Kr (n,γ)	11·56	45 ± 15		D^{83}Br
			^{82}Kr (d,p)	11·56			D^{83}Rb
			^{80}Se (α,n)	49·82			
0·0093	^{83}Rb	83d	^{81}Br $(\alpha,2n)$	49·48			P^{83m}Kr D^{83}Sr
0·010	^{137}Ce	8·7h	^{136}Ce (n,γ)	0·193	6·3 ± 1·5		D^{137}Pr
			^{139}La $(d,4n)$	99·911			
			^{139}La $(p,3n)$	99·911			
0·0105	^{134m}Cs	3·2h	^{133}Cs (n,γ)	100	17 ± 4mb		
			^{133}Cs (d,p)	100			
			^{134}Xe $(d, 2n)$	10·44			
			^{134}Xe (p,n)	10·44			
0·012	^{124m_1}Sb	1·3m	^{123}Sb (n,γ)	42·75	30 ± 15mb		
0·012	^{81}Kr	2·1 × 10^{5}y					
0·0122(?)	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1		P^{243}Am
0·0124	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·0125	^{239}Pu	24360y	^{238}Pu (n,γ)	†	403 ± 10		P^{235m}U
			^{238}U $(\alpha,3n)$	99·276‡			D^{239}Np
0·0127	^{193m}Pt	4·3d	^{192}Pt (n,γ)	0·78	90 ± 40		D^{193}Au
			^{192}Pt (d,p)	0·78			D^{193m}Au (0·03%)
			^{194}Pt $(n,2n)$	32·9			
			^{193}Ir $(d,2n)$	61·5			
0·0127	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·0135	^{73}As	76d	^{70}Ge (α,p)	20·55			P^{73m}Ge
			^{76}Se (p,α)	9·02			
0·0135	^{73}Ga	5·0h	^{73}Ge (n,p)	7·67			
			^{74}Ge (γ,p)	36·74			
			^{235}U (n, f)		1.0 × 10^{-4}%		

* Pile Neutrons † Artificially Active ‡ Naturally Active

γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·0135	^{73m}Ge	0·53s					D^{73}As
0·01437	^{57}Co	270d	^{56}Fe (d,n)	91·68			D^{57}Ni
			^{56}Fe (p,γ)	91·68			
0·016	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th $(\alpha,p2n)$	100‡			D^{237}Np
0·0172	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·0181	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·0181	^{231}U	4·3d	^{231}Pa $(d,2n)$	‡			P^{227}Th
			^{231}Pa $(\alpha,p3n)$	‡			P^{231}Pa
			^{232}Th $(\alpha,5n)$	100‡			
0·0185	^{112}Pd	21h	^{235}U(n,f)		8·3 × 10^{-3}%		P^{112}Ag
0·0185	^{124m_2}Sb	21m	^{123}Sb (n,γ)	42·75	30 ± 15mb		
0·0188	^{155}Tb	5·6d					
0·0189(?)	^{231}Pa	3·43 × 10^{4}y	^{232}Th $(d,3n)$	100‡			D^{231}Th(UY)
							P^{227}Ac
							D^{231}U
0·0189	^{155}Eu	1·7y	^{154}Eu (n,γ)	†	1500 ± 400*		D^{155}Sm
			^{154}Sm (d,n)	22·53			
			^{235}U (n,f)		~0·03%		
0·0199	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·020(?)	^{237}Np	2·20 × 10^{6}y					D^{237}U
							P^{233}Pa
0·0207	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
0·021	^{151}Sm	~93y	^{235}U (n,f)		0·445%		
0·0210	^{155}Tb	5·6d					
0·0216	^{151}Gd	150d	^{151}Eu $(d,2n)$	47·77			
0·023(?)	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As $(\alpha,2n)$	100			
			^{74}Se (α,p)	0·87			
0·0230	^{71}As	62h	^{70}Ge (d,n)	20·55			P^{71}Ge
			^{69}Ga $(\alpha,2n)$	60·2			
0·02383	^{119}Sb	38·0h	^{118}Sn (d,n)	24·01			D^{119}Te
			^{119}Sn (p,n)	8·58			
0·0242	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·0242	^{119m}Sn	250d	^{118}Sn (n,γ)	24·01	10 ± 6mb		
0·025	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As $(d,2n)$	100			
			^{75}As (p,n)	100			

* Pile Neutrons † Artificially Active ‡ Naturally Active

γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·025	^{58m}Co	9·2h	^{58}Fe (p,n)	0·31			
			^{59}Co (γ,n)	100			
			^{58}Ni (n,p)	67·76			
0·0255	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·0255	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·0256	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	13	D^{235}U (AcU) P^{231}Pa
0·0256	^{231}U	4·3d	^{231}Pa $(d,2n)$	‡			P^{227}Th
			^{231}Pa $(\alpha,p3n)$	‡			P^{231}Pa
			^{232}Th $(\alpha,5n)$	100‡			
0·0256	^{161}Tb	6·88d	^{160}Tb (n,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (d,n)	21·9			
			^{160}Dy (γ,p) (?)	25·53			
0·0256	^{161}Ho	2·5h	^{159}Tb $(\alpha,2n)$	100			D^{161}Er
			^{161}Dy (p,n)	18·88			
			^{160}Dy (d,n)	2·294			
0·026	^{235}Np	410d	^{235}U $(d,2n)$	0·720‡			
			^{233}U (α,pn)	†			
0·0264	^{241}Am	458y					D^{241}Pu
0·0264	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1		P^{237}Np
			^{238}U $(n,2n)$	99·276‡			D^{241}Pu
0·0265	^{155}Eu	1·7y	^{154}Eu (n,γ)	†	1500 ± 400*		D^{155}Sm
			^{154}Sm (d,n)	22·53			
			^{235}U (n,f)		~0·03%		
0·0268	^{129}Te	33·5d	^{128}Te (n,γ)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (d,p)	31·79			
			^{130}Te $(n,2n)$	34·49			
			^{235}U (n,f)		0·19%		
0·0268	^{129}Te	72m	^{128}Te (n,γ)	31·79	0·13 ± 0·03		D^{129m}Te
			^{128}Te (d,p)	31·79			D^{129}Sb
			^{130}Te $(n,2n)$	34·49			
			^{130}Te (γ,n)	34·49			
0·027	^{245}Pu	10·85d	^{245}Pu (n,γ)	†	260 ± 150*		P^{245}Am
0·0275	^{227}Ra	41·2m	^{226}Ra (n,γ)	‡	20 ± 3*		P^{227}Ac
0·0275	^{231}Pa	3·43 × 10^4y	^{232}Th $(d,3n)$	100‡			D^{231}Th (UY) P^{227}Ac D^{231}U
0·0276 (?)	^{182}Os	21·9h	^{185}Re $(p,4n)$	37·07			P(13h) ^{182}Re

* Pile Neutrons † Artificially Active ‡ Naturally Active

γ-Energy (Mev)	Nuclide	Half-Life	Some Modes of Formation	Per Cent Abundance of Relevant Stable Isotope	Thermal Neutron Activation Cross Section (Barns) or Fission Yield	Per Cent Abundance of γ-Radiation	Radioactive Parent or Daughter of
0·0277	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·0277	^{161}Tb	6·88d	^{160}Tb (n,γ)	†	525 ± 100*		
			^{160}Gd (d,n)	21·9			D^{161}Gd
			^{162}Dy (γ,p)(?)	25·53			
0·028	^{76}Kr	9·7h					P^{76}Br
0·028	^{88}Kr	2·77h	^{87}Kr (n,γ)	—	< 600		P^{88}Rb
							D^{88}Br
0·028	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th $(\alpha,p2n)$	100‡			D^{237}Np
0·0286	^{189}Hg	23m					P^{189}Au
0·0290	^{234}Th (UX)	24·10d	^{233}Th (n,γ)	†	1400 ± 200*		D^{238}U
							P^{234m}Pa (UX$_2$)
							P^{234}Pa (UZ) (0·63%)
0·0292	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12	2·1	P^{233}Pa
			^{232}Th (d,p)	100‡			
0·0296	^{140}Ba	12·80d	^{139}Ba (n,γ)	†	4 ± 1		P^{140}La
			^{235}U (n,f)		6·17%		Descendant ^{140}Xe
0·0297	^{237}Np	2·20 × 10^6y				14	D^{237}U
							P^{233}Pa
0·0297(?)	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1		P^{243}Am
0·0299	^{231}Pa	3·43 × 10^4y	^{232}Th $(d,3n)$	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·030	^{179}W	30m	^{181}Ta $(p,3n)$	99·9877			
0·030	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		
			^{148}Nd (d,p)	5·72			P^{149}Pm
			^{150}Nd $(n,2n)$	5·60			
0·0300	^{227}Th (Rd Ac)	18·17d					D^{227}Ac
							P^{223}Ra (AcX)
							D^{227}Pa
							D^{231}U
0·0304	^{93}Zr	1·1 × 10^6y					P^{93m}Nb
0·0304	^{93m}Nb	12y					D^{93}Zr

* Pile Neutrons † Artificially Active ‡ Naturally Active

γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·0306	^{201}Tl	72h	^{197}Au (*α*,*γ*)	100			D^{201}Pb
			^{201}Hg (*d*,2*n*)	13·22			
0·0308	^{195}Au	180d	^{193}Ir (*α*,2*n*)	61·5			P^{195m}Pt(?)
			^{194}Pt (*d*,*n*)	32·9			D^{195m}Hg
			^{195}Pt (*d*,2*n*)	33·8			D^{195}Hg
0·0308	^{189}Ir	11d					D^{189}Pt
							P^{189m}Os
0·0309	^{189m}Os	5·7h					D^{189}Ir
0·0311	^{195m}Pt	3·5d	^{196}Pt (*γ*,*n*)	25·2			D^{195}Au(?)
0·0312	^{223}Ra	11·68d					D^{227}Th
	(AcX)						(RdAc)
							D^{223}Fr
							(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·0313	^{192}Hg	5·7h					P^{192}Au
0·0313	^{156}Tb	5·6d					
0·0316	^{227}Th	18·17d					D^{227}Ac
	(RdAc)						
							P^{223}Ra
							(AcX)
							D^{227}Pa
							D^{231}U
0·0319	^{193m}Au	3·9s					P^{193m}Pt
							(0·03%)
							D^{193m}Hg
0·032	^{211}Rn	16h	^{209}Bi (*α*,2*n*)	100			P^{211}At
							P^{207}Po
0·032	^{28}Mg	21·2h	^{30}Si (*γ*,2*p*)	3·12			P^{28}Al
0·0321	^{201}Tl	72h	^{197}Au (*α*,*γ*)	100			
			^{201}Hg (*d*,2*n*)	13·22			D^{201}Pb
0·0325	^{83}Rb	83d	^{81}Br (*α*,2*n*)	49·48			P^{83m}Kr
							D^{83}Sr
0·0325	^{83m}Kr	114m	^{82}Kr (*n*,*γ*)	11·56	45 ± 15		
			^{82}Kr (*d*,*p*)	11·56			D^{83}Br
			^{80}Se (*α*,*n*)	49·82			D^{83}Rb
0·0328	^{200}Pb	21·5h					P^{200}Tl
							D^{200}Bi
							D^{204}Po
0·0332	^{237}Pu	45·6d	^{235}U (*α*,2*n*)	0·720‡			
			^{237}Np (*d*,2*n*)	†			
0·0332	^{241}Am	458y					D^{241}Pu
0·0332	^{237}U	6·75d	^{236}U (*n*,*γ*)	†	6 ± 1		P^{237}Np
			^{238}U (*n*,2*n*)	99·276‡			D^{241}Pu

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0·0334	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7	Weak	
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·0334	^{144}Ce	285d	^{143}Ce (n,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (n,f)		5·3%		Descendant
							^{144}Xe
0·0344	^{96m}Tc	51·5m	^{96}Mo (p,n)	16·50			
0·035	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D(9·4d)
							^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·035	^{246}Am	25·0m					P^{246}Cm
							D^{246}Pu
0·0354	^{125}I	60·0d	^{123}Sb ($\alpha,2n$)	42·75			D^{125}Xe
			^{124}Te (d,n)	4·61			
0·0355	^{125m}Te	58d	^{124}Te (n,γ)	4·61	5 ± 3		D^{125}Sb
0·036	^{245}Am	1·98h					D^{245}Pu
0·0362	^{189}Ir	11d					D^{189}Pt
							P^{189m}Os
0·0366	^{225}Ac	10·0d					D^{225}Ra
							P^{221}Fr
							D^{229}Pa
							D^{225}Th
0·0367(?)	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1		P^{243}Am
0·037	^{80m}Br	4·38h	^{79}Br (n,γ)	50·52	2·9 ± 0·5		P^{80}Br
			^{79}Br (d,p)	50·52			
			^{80}Se ($d,2n$)	49·82			
			^{80}Se (p,n)	49·82			
0·0370	^{195}Tl	1·2h					P^{195}Hg
0·0371	^{195m}Hg	40·0h	^{197}Au ($d,4n$)	100			P^{195m}Au
			^{197}Au ($p,3n$)	100			P^{195}Hg
0·0374	^{193}Au	15·8h	^{191}Ir ($\alpha,2n$)	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt ($d,3n$)	32·9			P^{193}Pt
0·0374	^{185}Ir	15h					
0·0379	^{193}Hg	~6h					D^{193m}Hg
0·038	^{129}I	1·72 × 10^{7}y					
0·0381	^{231}Pa	3·43 × 10^{4}y	^{232}Th ($d,3n$)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·0382	^{162}Ho	67m	^{159}Tb (α,n)	100			
			^{162}Dy (p,n)	25·53			
			^{162}Dy ($d,2n$)	25·53			
0·0383	^{239}Pu	24360y	^{238}Pu (n,γ)	†	403 ± 10	Very weak	D^{239}Np
			^{238}U ($\alpha,3n$)	99·276‡			P^{235m}U

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0·0384	^{225}Ac	10·0d					D^{225}Ra
							P^{221}Fr
							D^{229}Pa
							D^{225}Th
0·03896	^{95m}Tc	60d	^{96}Mo (d,2n)	15·70			
			^{95}Mo (p, n)	15·70			
			^{94}Mo (d,n)	9·12			
0·039	^{190m}Os	9·5m					D(3·2h)^{190}Ir
0·0391	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·0392	^{193m}Hg	10·0h	^{197}Au (p,5n)	100			P^{193}Hg
							P^{193m}Au
0·0400	^{129m}Xe	8·0d	^{128}Xe (n,γ)	1·919	< 5		
0·0400	^{103m}Rh	57m					D^{103}Ru
							D^{103}Pd
0·040	^{83}Sr	33h					P^{83}Rb
							D^{83}Y
0·040	^{118}Sb	5·1h	^{115}In (α,n)	95·77			D^{118m}Sb(?)
			^{117}Sn (d,n)	7·57			
0·040	^{129}Cs	30·7h	^{127}I (α,2n)	100			D^{129}Ba
0·040	^{225}Ra	14·8d	^{224}Ra (n,γ)	‡	12·0 ± 0·5*	33	D^{229}Th
							P^{225}Ac
0·040	^{212}Bi(ThC)	60·5m				Strong	D^{212}Pb
							(ThB)
							P^{212}Po
							(ThC′)
							P^{208}Tl
							(ThC″)
							D^{216}At
0·0401	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th (α,p2n)	100†			D^{237}Np
0·0402	^{103}Pd	17·0d	^{102}Pd (n,γ)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (p,n)	100			D^{103}Ag
			^{103}Rh (d,2n)	100			
0·0408	^{144}Ce	285d	^{143}Ce (n,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (n,f)		5·3%		Descendant
							^{144}Xe
0·0410	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			

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0·0410	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·041	^{99}Mo	66·0h	^{98}Mo (n,γ)	23·75	0·45 ± 0·10		P^{99m}Tc
			^{96}Zr (α,n)	2·80			
			^{98}Mo (d,p)	23·75			
			^{100}Mo $(n,2n)$	9·62			
			^{100}Mo (γ,n)	9·62			
			^{235}U (n,f)		6·2%		
0·041	^{254}Fm	3·24h				0·02	D(37h)^{254}E
0·0415	^{94m}Nb	6·6m	^{93}Nb(n,γ)	100	1·0 ± 0·5		
			^{93}Nb (d,p)	100			
0·0415	^{153}Tb	62h	^{151}Eu $(\alpha,2n)$	47·77			P^{153}Gd
0·0417	^{253}E	20·03d					D^{253}Cf D^{253}Fm
0·0417	^{191}Os	16·0d	^{190}Os (n,γ)	26·4	8 ± 3		D^{191m}Os P^{191m}Ir
0·0417	^{191m}Ir	4·9s					D^{191}Os
0·0418	^{62}Zn	9·33h	^{60}Ni $(\alpha,2n)$	26·16			P^{62}Cu
			^{64}Zn $(\gamma,2n)$	48·89			
			^{63}Cu $(p,2n)$	69·1			
0·042	^{243}Bk	4·5h	^{241}Am $(\alpha,2n)$	†			P^{243}Cm
			^{242}Cm (d,n)	†			
0·042	^{246}Cf	35·7h	^{243}Cm (α,n)	†		$1{\cdot}4 \times 10^{-2}$	P^{242}Cm
			^{244}Cm $(\alpha,2n)$	†			D^{246}E
0·042	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb	$3{\cdot}7 \times 10^{-3}$	P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
0·0421	^{242m}Am	16·01h	^{241}Am (n,γ)	†	750 ± 80*		P^{242}Cm P^{242}Pu
0·0422	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1	1	P^{243}Am
0·0427	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7	Weak	
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·0428	^{233}U	$1{\cdot}62 \times 10^{5}$y	^{232}U (n,γ)	†	300 ± 200*	0·05	D^{233}Pa P^{229}Th
0·0429	^{240}Np	7·3m	^{239}Np (n,γ)	†	35 ± 10*		D^{240}U
0·0429	^{240}Am	51h	^{237}Np (α,n)	†			
			^{239}Pu (d,n)	†			
			^{239}Pu $(\alpha,p2n)$	†			
0·0429	^{244}Cm	17·9y	^{243}Cm (n,γ)	†	250 ± 150*		D^{244}Am D^{244}Bk P^{240}Pu D^{248}Cf

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0·0429	^{250}Cf	10·9y	^{249}Cf (n,γ)	†	270 ± 100*		D^{250}Bk
							P^{246}Cm
0·043	^{234m}Pa	1·175m	^{233}Pa (n,γ)	†	43 ± 5		D^{234}Th (UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
0·043	^{234}Np	4·40d	^{235}U ($d,3n$)	0·720‡			D^{234}Pu
			^{235}U ($\alpha,p4n$)	0·720‡			
			^{235}U ($p,2n$)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U ($\alpha,p2n$)	†			
0·043	^{184}Re	2·2d	^{181}Ta (α,n)	99·9877			
			^{184}W (p,n)	30·6			
0·0430	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th (UX$_1$) (0·63%)
0·0434	^{252}Cf	2·2y	^{251}Cf (n,γ)	†	3000 ± 2000*		P^{248}Cm
0·0435	^{237}Pu	45·6d	^{235}U ($\alpha,2n$)	0·720‡			
			^{237}Np ($d,2n$)	†			
0·0435	^{238}Pu	86·4y	^{238}U ($d,2n$)	99·276‡		0·038	D^{238}Np
			^{238}U ($\alpha,4n$)	99·276‡			D^{242}Cm
			^{235}U (α,n)	0·720‡			
0·0435	^{241}Am	458y					D^{241}Pu
0·0435	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1		P^{237}Np
			^{238}U ($n,2n$)	99·276‡			D^{241}Pu
0·0440	^{238}Np	2·10d	^{237}Np (n,γ)	†	169 ± 6		P^{238}U
			^{237}Np (d,p)	†			D^{242}Am
			^{238}U ($d,2n$)	99·276‡			
			^{238}U ($\alpha,p3n$)	99·276‡			
0·0440(?)	^{231}Pa	3·43 × 10^{4}y	^{232}Th ($d,3n$)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·0441	^{242}Cm	162·5d	^{239}Pu (α,n)	†			D^{242}Am
			^{241}Am (d,n)	†			D^{242m}Am
							D^{246}Cf
							P^{238}Pu
0·0445	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr(d,p)	0·354			

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0·0445	^{242m}Am	16·01h	^{241}Am(n,γ)	†	750 ± 80*		P^{242}Cm
							P^{242}Pu
0·0446	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U ($\alpha,p2n$)	99·276‡			P^{239}Pu
							D^{243}Am
0·0446	^{238}Np	22h	^{235}U (d,n)	0·720‡			P^{236}Pu
			^{235}U ($\alpha,p2n$)	0·720‡			
			^{233}U (α,p)	†			
			^{237}Np ($n,2n$)	†			
0·0447	^{239}Am	12h	^{237}Np ($\alpha,2n$)	†			
			^{239}Pu (p,n)	†			
			^{239}Pu ($d,2n$)	†			
			^{239}Pu ($\alpha,p3n$)	†			
0·045	^{66}Ge	~150m					P^{66}Ga
0·0451	^{242m}Am	16·01h	^{241}Am (n,γ)	†	750 ± 80*	Weak	P^{242}Cm
							P^{242}Pu
0·0453	^{240}Pu	6580y	^{239}Pu (n,γ)	†	315 ± 16		D^{244}Cm
			^{238}U ($\alpha,2n$)	99·276‡			
0·0453	^{236}Np	22h	^{235}U (d,n)	0·720‡			P^{236}Pu
			^{235}U ($\alpha,p2n$)	0·720‡			
			^{233}U (α,p)	†			
			^{237}Np ($n,2n$)	†			
0·0453	^{155}Eu	1·7y	^{154}Eu (n,γ)	†	1500 ± 400*		D^{155}Sm
			^{154}Sm (d,n)	22·53			
			^{235}U (n,f)		~0·03%		
0·0453	^{155}Tb	5·6d					
0·046	^{78}Br	6·4m	^{77}Se (d,n)	7·58			
			^{78}Se (p,n)	23·52			
			^{75}As (α,n)	100			
			^{79}Br ($n,2n$)	50·52			
0·046	^{83}Br	2·30h	^{82}Se (d,n)	9·19			D^{83}Se
			^{235}U (n,f)		0·48%		P^{83m}Kr
0·0460	^{72}Se	8·40d	^{75}As ($d,5n$)	100			P^{72}As
0·0465	^{210}Pb (RaD)	19·4y					D^{210}Tl (RaC″) D^{214}Po (RaC′) P(5d)^{210}Bi (RaE)
0·0465	^{183}Re	71d	^{181}Ta ($\alpha,2n$)	99·9877			D^{183}Os
			^{182}W (p,n)	14·4			
			^{182}W (d,n)	26·4			

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0·0465	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·0468	^{210}At	8·3h	^{209}Bi (α,3*n*)	100			P^{210}Po
							P^{206}Bi
0·047	^{238}Pu	2·85y	^{235}U (α,3*n*)	0·720‡		0·031	P^{234}U
			^{238}U (*d*,2*n*)	99·276‡			D^{242}Cm
			^{238}U (α,4*n*)	99·276‡			D^{238}Np
			^{237}Np (*d*,2*n*)	†			
0·047	^{246}Pu	10·85d	^{245}Pu (*n*,γ)	†	260 ± 150*		P^{246}Am
0·0472	^{232}Pa	1·31d	^{231}Pa (*n*,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (α,*p*3*n*)	100‡			
0·0472	^{165}Tm	29h					P^{165}Er
0·0474	^{181}Re	20h					
0·0478	^{198m}Tl	1·9h	^{197}Au (α,3*n*)	100			D(25m)^{198}Pb
0·048	^{239}Am	12h	^{237}Np (α,2*n*)	†			
			^{239}Pu (*p*,*n*)	†			
			^{239}Pu (*d*,2*n*)	†			
			^{239}Pu (α,*p*3*n*)	†			
0·048	^{238}U (U$_I$)	4·51 × 10^{9}y					P^{234}Th(UX$_1$)
0·048	^{194}Hg	0·4s					
0·0482	^{191}Au	3·0h	^{191}Ir (α,4*n*)	38·5			P^{191}Pt
			^{192}Pt (*d*,3*n*)	0·78			D^{191}Hg
0·0489	^{161}Tb	6·88d	^{160}Tb (*n*,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (*d*,*n*)	21·9			
			^{162}Dy (γ,*p*)(?)	25·53			
0·049	^{80m}Br	4·38h	^{79}Br (*n*,γ)	50·52	2·9 ± 0·5		P^{80}Br
			^{79}Br (*d*,*p*)	50·52			
			^{80}Se (*d*,2*n*)	49·82			
			^{80}Se (*p*,*n*)	49·82			
0·0494	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (α,*p*2*n*)	99·276‡			P^{239}Pu
							D^{243}Am
0·0495	^{239}Am	12h	^{237}Np (α,2*n*)	†			
			^{239}Pu (*p*,*n*)	†			
			^{239}Pu (*d*,2*n*)	†			
			^{239}Pu (α,*p*3*n*)	†			
0·0497	^{199}Au	3·14d	^{198}Au (*n*,γ)	†	26000 ± 1200		D^{199}Pt
			^{198}Pt (*d*,*n*)	7·19			
			^{199}Hg (*n*,*p*)	16·84			

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0·0498	^{223}Fr (AcK)	22m				40	D^{227}Ac P^{223}Ra(AcX) P^{219}At
0·05	^{146}Ce	13·9m				Weak	P^{146}Pr
0·0500	^{199}Tl	7·4h	^{197}Au (α,2n) ^{199}Hg (d,2n)	100 16·84			D^{199}Pb
0·050	^{234}U(U$_{II}$)	2·48 × 10^{5}y	^{233}U (n,γ)	†	52 ± 2		D^{234m}Pa (UX$_2$) D^{234}Pa(UZ) P^{230}Th(Io)
~0·050	^{236}U	2·39 × 10^{7}y	^{235}U (n,γ)	‡	107 ± 5		
0·0501	^{227}Th (RdAc)	18·17d					D^{227}Ac P^{223}Ra (AcX) D^{227}Pa D^{231}U
0·0508	^{239}Pu	24360y	^{238}Pu (n,γ) ^{238}U (α,3n)	† 99·276‡	403 ± 10		D^{239}Np P^{235m}U
0·051	^{253}E	20·03d					D^{253}Cf D^{253}Fm
0·0511	^{104m}Rh	4·4m	^{103}Rh (n,γ) ^{104}Ru (p,n)	100 18·5	12 ± 2		P^{104}Rh
0·0517	^{230}Pa	17·7d	^{232}Th (d,4n) ^{232}Th (α,p5n) ^{230}Th (d,2n) ^{231}Pa (d,p2n)	100‡ 100‡ ‡ ‡			P^{230}U P^{230}Th(Io) P^{226}Ac
0·0517	^{152}Tb	62h	^{151}Eu (α,2n)	47·77			P^{152}Gd
0·0526	^{231}Pa	3·43 × 10^{4}y	^{232}Th (d,3n)	100‡			D^{231}Th (UY) P^{227}Ac D^{231}U
0·0526	^{182}Re	71d	^{181}Ta (α,2n) ^{183}W (p,n) ^{182}W (d,n)	99·9877 14·4 26·4			D^{182}Os
0·0526	^{182}Ta	5·0d	^{182}Ta (n,γ) ^{183}W (n,p) ^{181}W (γ,p)	† 14·4 30·6	17000 ± 2000*		
0·0528	^{230}Pa	17·7d	^{232}Th (d,4n) ^{232}Th (α,p5n) ^{230}Th (d,2n) ^{231}Pa (d,p2n)	100‡ 100‡ ‡ ‡			P^{230}U P^{230}Th(Io) P^{226}Ac
0·053	^{64}Ga	15·2m	^{64}Zn (d,n) ^{64}Zn (p,γ)	48·89 48·89			P^{65}Zn

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0·053	^{103}Pd	17·0d	^{102}Pd (*n*,*γ*)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (*p*,*n*)	100			D^{103}Ag
			^{103}Rh (*d*,2*n*)	100			
0·0530	^{182}Re	64·0h	^{181}Ta (*α*,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·0531	^{191}Au	3·0h	^{191}Ir (*α*,4*n*)	38·5			P^{191}Pt
			^{192}Pt (*d*,3*n*)	0·78			D^{191}Hg
0·0532	^{214}Pb (RaB)	26·8m					D^{218}Po (RaA)
							P^{214}Bi(RaC)
0·0532	^{144}Ce	285d	^{143}Ce (*n*,*γ*)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (*n*,*f*)		5·3%		Descendant ^{144}Xe
0·0539	^{73}As	76d	^{70}Ge (*α*,*p*)	20·55			P^{73m}Ge
			^{76}Se (*p*,*α*)	9·02			
0·0539	^{73m}Ge	0·53s					D^{73}As
0·054	^{125}Xe	18·0h	^{122}Te (*α*,*n*)	2·46			P^{125}I
			^{124}Xe (*n*,*γ*)	0·096			D^{125}Cs
0·054	^{73}Ga	5·0h	^{73}Ge (*n*,*p*)	7·67			
			^{74}Ge (*γ*,*p*)	36·74			
			^{235}U (*n*,*f*)		1·0 × 10^{-4}%		
0·054	^{243}Pu	4·98h	^{242}Pu (*n*,*γ*)	†	19 ± 1		P^{243}Am
0·0545	^{165}Tm	29h					P^{165}Er
0·055	^{103}Ru	39·8d	^{102}Ru (*n*,*γ*)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (*d*,*p*)	31·5			
			^{104}Ru (*γ*,*n*)	18·5			
			^{235}U (*n*,*f*)		3·7%		
0·055	^{131}Ba	11·5d	^{130}Ba (*n*,*γ*)	0·101	10 ± 1		P^{131}Cs
~0·055	^{255}Fm	21·5h				1	D^{255}E
0·0555	^{182}Os	21·9h	^{185}Re (*p*,4*n*)	37·07			P(13h)^{182}Re
0·0556(?)	^{237}Pu	45·6d	^{235}U (*α*,2*n*)	0·720‡			
			^{237}Np (*d*,2*n*)	†			
0·0556	^{171}Lu	8·5d	^{169}Tm (*α*,2*n*)	100			P^{171m}Yb
			^{171}Yb (*p*,*n*)	14·31			D^{171}Hf
0·0561	^{233}U	1·62 × 10^{5}y	^{232}U (*n*,*γ*)	†	300 ± 200*	0·01	D^{233}Pa
							P^{229}Th
0·0565	^{195m}Au	30·6s					D^{195m}Hg
0·0567	^{233}Th	22·12m	^{232}Th (*n*,*γ*)	100‡	7·33 ± 0·12		P^{233}Pa
			^{232}Th (*d*,*p*)	100‡			
0·0568	^{237}Np	2·20 × 10^{6}y					D^{237}U
							P^{233}Pa

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0·0568	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·0568	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·057	^{127}Xe	36·41d	^{126}Xe (n,γ)	0·090			D^{127}Cs
			^{127}I (p,n)	100			
			^{127}I ($d,2n$)	100			
			^{124}Te (α,n)	4·61			
0·0571	^{231}Pa	3·43 × 10^{4}y	^{232}Th ($d,3n$)	100‡			D^{231}Th(UY) P^{227}Ac D^{231}U
0·0571	^{167}Tm	9·6d	^{165}Ho ($\alpha,2n$)	100			P^{167m}Er
			^{167}Er (p,n)	22·94			
0·0572	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U ($\alpha,p2n$)	99·276‡			P^{239}Pu D^{243}Am
0·0573	^{239}Am	12h	^{237}Np ($\alpha,2n$)	†			
			^{239}Pu (p,n)	†			
			^{239}Pu ($d,2n$)	†			
			^{239}Pu ($\alpha,p3n$)	†			
0·0573	^{161}Tb	6·88d	^{160}Tb (n,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (d,n)	21·9			
			^{162}Dy (γ,p)(?)	25·53			
0·0574	^{143}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant ^{143}Xe
0·0575	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
0·0575	^{159}Gd	18·0h	^{158}Gd (n,γ)	24·9	4 ± 2		
			^{158}Gd (d,p)	24·9			
			^{160}Gd (γ,n)	21·9			
0·0576	^{180m}Hf	5·5h	^{179}Hf (n,γ)	13·75			
0·0577	^{162}Ho	67m	^{159}Tb (α,n)	100			
			^{162}Dy (p,n)	25·53			
			^{162}Dy ($d,2n$)	25·53			
0·0578	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th ($\alpha,p2n$)	100‡			D^{237}Np

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0·0579	^{232}U	74y	^{232}Th (*α*,4*n*)	100‡		0·21	D^{232}Pa
			^{231}Pa (*d*,*n*)	‡			D^{236}Pu
			^{231}Pa (*α*,*p*2*n*)	‡			P^{228}Th (RdTh)
0·0580	^{192m}Ir	1·42m	^{191}Ir (*n*,*γ*)	38·5	260 ± 100		
0·0580	^{159}Dy	134d	^{159}Tb (*d*,2*n*)	100			
0·058	^{127}Sb	88h	^{235}U (*n*,*f*)		0·094%		P^{127}Te(84%) P^{127m}Te (16%) D^{127}Sn
0·058	^{109}In	4·3h	^{107}Ag (*α*,2*n*)	51·35			Descendant ^{109}Sn
			^{106}Cd (*α*,*p*)	1·22			
			^{106}Cd (*d*,*n*)	1·22			
			^{106}Cd (*p*,*γ*)	1·22			
0·0585	^{231}Th(UY)	25·64h	^{230}Th (*n*,*γ*)	‡	35 ± 10*		D^{235}U(AcU) P^{231}Pa
0·0585	^{231}U	4·3d	^{231}Pa (*d*,2*n*)	‡			P^{227}Th
			^{231}Pa (*α*,*p*3*n*)	‡			P^{231}Pa
			^{232}Th (*α*,5*n*)	100‡			
0·0589	^{60m}Co	10·47m	^{59}Co (*n*,*γ*)	100	16 ± 3		
			^{59}Co (*d*,*p*)	100			
			^{60}Ni (*n*,*p*)	26·16			
0·0590	^{189}Ir	11d					D^{189}Pt P^{189m}Os
0·0590	^{144}Ce	285d	^{142}Ce (*n*,*γ*)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (*n*,*f*)		5·3%		Descendant ^{144}Xe
0·059	^{127m}Te	105d	^{126}Te (*n*,*γ*)	18·71	90 ± 20mb		P^{127}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb (16%)
			^{127}I (*n*,*p*)	100			
			^{235}U (*n*,*f*)		0·033%		
0·059	^{127}Te	9·4h	^{126}Te (*n*,*γ*)	18·71	0·8 ± 0·2	0·05	D^{127m}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb (84%)
			^{128}Te (*n*,2*n*)	31·79			
			^{127}I (*n*,*p*)	100			
0·059	^{232}Th	1·39 × 10^{10}y					P^{228}Ra (MsTh$_1$)
0·0596	^{237}Pu	45·6d	^{235}U (*α*,2*n*)	0·720‡			
			^{237}Np (*d*,2*n*)	†			
0·0596	^{241}Am	458y					D^{241}Pu

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0·0596	^{237}U	6·75d	^{236}U(n,γ) ^{238}U ($n,2n$)	† 99·276‡	6 ± 1	36	P^{237}Np D^{241}Pu
0·0599	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi D^{210}Rn D^{206}At
0·0599	^{185}Ir	15h					
0·06(?)	^{245}Am	1·98h					D^{245}Pu
0·060	^{115}Sb	60m					
0·0600	^{155}Eu	1·7y	^{154}Eu (n,γ) ^{154}Sm (d,n) ^{235}U (n,f)	† 22·53	1500 ± 400* ~0·03%		D^{155}Sm
0·0601	^{160m}Ho	5·0h					D^{160}Er
0·0601	^{155}Tb	5·6d					
0·0603	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
0·0603	^{144}Pr	17·27m					D^{144}Ce
0·0605	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$) ^{182}W (p,n) ^{182}W ($d,2n$)	99·9877 26·4 26·4			
0·0605	^{165}Tm	29h					P^{165}Er
0·0607	^{122m}Sb	3·5m	^{121}Sb (n,γ)	57·25			
0·0608	^{157}Dy	8·2h					
0·0613	^{145}Sm	340d	^{144}Sm (n,γ)	3·16	< 2		P^{145}Pm
0·0614	^{239}Np	2·346d	^{238}U (d,n) ^{238}U ($\alpha,p2n$)	99·276‡ 99·276‡			D^{239}U P^{239}Pu D^{243}Am
0·0614	^{195}Hg	9·5h	^{197}Au ($p,3n$)	100			D^{195m}Hg D^{195}Tl
0·0616	^{227}Th (RdAc)	18·17d					D^{227}Ac P^{223}Ra (AcX) D^{227}Pa D^{231}U
0·062	^{254}E	480d					P^{250}Bk
0·0628	^{225}Ac	10·0d					D^{225}Ra P^{221}Fr D^{229}Pa D^{225}Th

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0·0628	^{234}Th (UX$_1$)	24·10d	^{233}Th (n,γ)	†	1400 ± 200*		D^{238}U P^{234m}Pa (UX$_2$) P^{234}Pa(UZ) (0·63%)
0·063	^{49}Cr	41·9m	^{46}Ti (α,n) ^{50}Cr $(n,2n)$ ^{50}Cr (γ,n)	7·99 4·31 4·31			
0·0631	^{169}Yb	31·8d	^{168}Yb (n,γ) ^{169}Tm $(d,2n)$	0·140 100	11000 ± 3000*		D^{169}Lu
0·0635	^{231}Pa	3·43 × 10^{4}y	^{232}Th $(d,3n)$	100‡			D^{231}Th (UY) P^{227}Ac D^{231}U
0·0635	^{188m}Re	18·7m	^{189}Os (γ,p)(?)	16·1			P^{188}Re
0·0638	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU) P^{231}Pa
0·0640	^{105}Ag	40d	^{105}Pd (p,n) ^{105}Pd $(d,2n)$ ^{103}Rh $(\alpha,2n)$	22·2 22·2 100			
0·0642	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$ ^{192}Pt $(d,3n)$	38·5 0·78			P^{191}Pt D^{191}Hg
0·0648	^{237}U	6·75d	^{236}U (n,γ) ^{238}U $(n,2n)$	† 99·276‡	6 ± 1	2·3	P^{237}Np D^{241}Pu
0·065	^{103}Pd	17·0d	^{102}Pd (n,γ) ^{103}Rh (p,n) ^{103}Rh $(d,2n)$	0·96 100 100	4·8 ± 1·5		P^{103m}Rh D^{103}Ag
0·065	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA) P^{211}Bi(AcC)
0·065	^{161}Er	3·1h					P^{161}Ho
0·065	^{151}Pm	27·5h					D^{151}Nd
0·0652	^{187}Ir	13h	^{185}Re $(\alpha,2n)$ ^{188}Os $(d,3n)$	37·07 13·3			
0·0653	^{119m}Sn	~250d	^{118}Sn (n,γ)	24·01	10 ± 6mb		
0·0654	^{155}Dy	10h					
0·0657	^{182}Re	12·7h	^{181}Ta $(\alpha,3n)$ ^{182}W (p,n) ^{182}W $(d,2n)$	99·9877 26·4 26·4			D^{182}Os
0·0657	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$ ^{183}W (p,n) ^{182}W $(d,2n)$	99·9877 26·4 26·4			

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0·0657	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·0658	^{73}Se	7·1h	^{70}Ge (α,n)	20·55			
			^{75}As $(d,4n)$	100			
0·066	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As $(d,2n)$	100			
			^{75}As (p,n)	100			
0·066	^{75}Ge	82m	^{74}Ge (n,γ)	36·74	0·21 ± 0·08		
			^{74}Ge (d,p)	36·74			
			^{76}Ge $(n,2n)$	7·67			
			^{75}As (n,p)	100			
0·066	^{151}Pm	27·5h					D^{151}Nd
0·0667	^{104}Cd	59m	^{107}Ag $(p,4n)$	51·35			P(27m) ^{104}Ag
0·0667	^{171}Tm	680d	^{170}Tm (n,γ)	†	150 ± 20*		D^{171}Er
0·0667	^{171}Lu	8·5d	^{169}Tm $(\alpha,2n)$	100			P^{171m}Yb
			^{171}Yb (p,n)	14·31			D^{171}Hf
0·067	^{145}Pm	18y					D^{145}Sm
0·0672	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
0·0673	^{183m}Os	10h					
0·0676	^{226}Ac	29h					D^{230}Pa
							P^{226}Th
0·0677	^{182}Re	12·7h	^{181}Ta $(\alpha,3n)$	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·0677	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·0677	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·0678	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U $(\alpha,p2n)$	99·276‡			P^{239}Pu
							D^{243}Am
0·0679	^{239}Am	12h	^{237}Np $(\alpha,2n)$	†			
			^{239}Pu (p,n)	†			
			^{239}Pu $(d,2n)$	†			
			^{239}Pu $(\alpha,p3n)$	†			
0·068	^{230}Th(Io)	8·0 × 10^{4}y				0·59	D^{234}U(U$_{II}$)
							P^{226}Ra
							D^{230}Pa
0·0681	^{153}Tb	62h	^{151}Eu $(\alpha,2n)$	47·77			P^{153}Gd

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0·0685	^{231}Th(UY)	25·64h	^{230}Th,(n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·0685	^{231}U	4·3d	^{231}Pa ($d,2n$)	‡			P^{227}Th
			^{231}Pa ($\alpha,p3n$)	‡			P^{231}Pa
			^{232}Th ($\alpha,5n$)	100‡			
0·0687	^{211}Rn	16h	^{209}Bi ($\alpha,2n$)	100			P^{211}At
							P^{207}Po
0·0695	^{189}Ir	11d					D^{189}Pt
							P^{189m}Os
0·0698	^{153}Gd	236d	^{152}Gd (n,γ)	0·20	< 25		
			^{153}Eu ($d,2n$)	52·23			
0·070	^{66}Ge	~150m					P^{66}Ga
0 070	^{133}Ba	7·2y	^{132}Ba (n,γ)	0·097	7 ± 2		D^{133m}Ba
0·070	^{61}Cu	3·32h	^{60}Ni (d,n)	26·16		4	D^{61}Zn
			^{61}Ni (p,n)	1·25			
			^{60}Ni (p,γ)	26·16			
			^{63}Cu ($\gamma,2n$)	69·1			
0·070	^{151}Pm	27·5h					D^{151}Nd
0·070	^{153}Sm	47·1h	^{152}Sm (n,γ)	26·63	140 ± 40		
			^{153}Sm (d,p)	26·63			
			^{154}Sm (γ,n)	22·53			
			^{150}Nd (α,n)	5·60			
			^{154}Sm ($n,2n$)	22·53			
			^{235}U (n,f)		0·15%		
0·0716	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re ($d,2n$)	37·07			
0·0716	^{177}Lu	6·75d	^{176}Lu (n,γ)	2·60	4000 ± 800		D^{177}Yb
			^{176}Lu (d,p)	2·60			
0·0720	^{187}W	24·0h	^{186}W (n,γ)	28·4	34 ± 7		
			^{186}W (d,p)	28·4			
0·072	^{44}Ti	~10^{3}y					P^{44}Sc
0·072	^{145}Pm	18y					D^{145}Sm
0·072	^{61}Co	99·0m	^{60m}Co (n,γ)	†	100 ± 50	~100	D^{61}Fe
			^{60}Co (n,γ)	†	6 ± 2		
			^{61}Ni (n,p)	1·25			
			^{64}Ni (p,α)	1·16			
0·0721	^{230}U	20·8d	^{232}Th ($\alpha,6n$)	100‡		0·75	D^{230}Pa
			^{231}Pa ($d,3n$)	‡			D^{234}Pu
			^{231}Pa ($\alpha,p4n$)	‡			P^{226}Th
0·0721	^{228}Ac	29h					D^{230}Pa
							P^{226}Th

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0·0730	^{164}Ho	36·7m	^{164}Dy (p,n)	28·18			
			^{165}Ho $(n,2n)$	100			
			^{165}Ho (γ,n)	100			
0·073	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
0·0736	^{239}U	23·54m	^{238}U (n,γ)	99·276‡	2·74 ± 0·06		P^{239}Np
			^{238}U (d,p)	99·276‡			
0·0737	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·0740	^{231}Pa	3·43 × 10^4y	^{232}Th $(d,3n)$	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·074	^{83}Sr	33h					P^{83}Rb
							D^{83}Y
0·074	^{199}Pt	31m	^{198}Pt (n,γ)	7·19	3·9 ± 0·8		
			^{198}Pt (d,p)	7·19			
			^{202}Hg (n,α)	29·80			
0·0742	^{191m}Os	14h					P^{191}Os
0·0742	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·0746	^{243}Am	7·95 × 10^3y					P^{239}Np
							D^{243}Pu
0·0748	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th $(\alpha,p2n)$	100‡			D^{237}Np
0·0748	^{161}Tb	6·88d	^{160}Tb (n,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (d,n)	21·9			
			^{162}Dy (γ,p)(?)	25·53			
0·0750	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·075(?)	^{125m}Xe	55s					D^{125}Cs (~0·1%)
0·0753	^{122m}Sb	3·5m	^{121}Sb (n,γ)	57·25			
0·0758	^{171m}Yb	Short					D (8·5d) ^{171}Lu
0·076	^{172}Tm	63·6h					D^{172}Er
0·0761(?)	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·0764(?)	^{237}Pu	45·6d	^{235}U $(\alpha,2n)$	0·720‡			
			^{237}Np $(d,2n)$	†			
0·0766	^{174}Lu	165d	^{175}Lu $(n,2n)$	97·40			

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0·077	^{197}Pt	18h	^{196}Pt (n,γ)	25·2	0·8 ± 0·1		
			^{196}Pt (d,p)	25·2			
			^{198}Pt (γ,n)	7.19			
			^{198}Pt ($n,2n$)	7·19			
			^{200}Hg (n,α)	23·13			
0·0772	^{104m}Rh	4·4m	^{103}Rh (n,γ)	100	12 ± 2		P^{104}Rh
			^{104}Ru (p,n)	18·5			
0·0772	^{231}Pa	3·43 × 10^{4}y	^{232}Th ($d,3n$)	100‡			D^{231}Th(UY)
							P^{227}Ac
							D^{231}U
0·0773	^{165}Tm	29h					P^{165}Er
0·0775	^{161}Ho	2·5h	^{159}Tb ($\alpha,2n$)	100			D^{161}Er
			^{161}Dy (p,n)	18·88			
			^{160}Dy (d,n)	2·294			
0·0776	^{197}Hg	65h	^{197}Au ($d,2n$)	100			D^{197m}Hg
			^{198}Hg ($n,2n$)	10·02			D(2·8h)^{197}Tl
0·0777	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·078(?)	^{245}Am	1·98h					D^{245}Pu
0·078	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·0781	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$)
							P^{228}Th (RdTh)
0·0783	^{161}Tb	6·88d	^{160}Tb (n,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (d,n)	21·9			
			^{162}Dy (γ,p)(?)	25·53			
0·0785	^{204}Bi	11·6h	^{204}Pb ($d,2n$)	1·40			P^{204m}Pb
			^{203}Tl ($\alpha,3n$)	29·50			D^{204}Po
0·0787	^{172}Lu	6·70d	^{169}Tm (α,n)	100			D^{172}Hf
			^{172}Yb (p,n)	21·82			
0·0788	^{173}Lu	1·4y	^{173}Yb (p,n)	16·13			D^{173}Hf
0·079	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·0799	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{168}Er (p,n)	27·07			
			^{169}Tm ($n,2n$)	100			
0·0799	^{144}Ce	285d	^{143}Ce (n,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (n,f)		5·3%		Descendant ^{144}Xe
~0·08	^{246}Pu	10·85d	^{245}Pu (n,γ)	†	260 ± 150*		P^{246}Am

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0·080	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
0·080	^{131}I	8·08d	^{130}Te (d,n)	34·49		2·2	D^{131}Te
			^{235}U (n,f)		2·8%		P^{131m}Xe (~1%)
0·080	^{223}Fr (AcK)	22m				24	D^{227}Ac
							P^{223}Ra(AcX)
							P^{219}At
0·080	^{135}Pr	22m					P^{135}Ce
0·0802	^{204}Bi	11·6h	^{204}Pb ($d,2n$)	1·40			P^{204m}Pb
			^{203}Tl ($\alpha,3n$)	29·50			D^{204}Po
0·0802	^{193m}Ir	11·9d					
0·0803	^{166}Ho	27·3d	^{165}Ho (n,γ)	100	60 ± 12		D^{166}Dy
0·0803	^{166}Ho	> 30y					
0·0807	^{100}Pd	4·0d	^{103}Rh ($d,5n$)	100			P^{100}Rh
0·0807	^{166}Tm	7·7h	^{165}Ho ($\alpha,3n$)	100			D^{166}Yb
			^{166}Er (p,n)	33·41			
0·0808	^{162}Ho	67m	^{159}Tb (α,n)	100			
			^{162}Dy (p,n)	25·53			
			^{162}Dy ($d,2n$)	25·53			
0·081	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As ($d,2n$)	100			
			^{75}As (p,n)	100			
0·081	^{133}Xe	5·270d	^{132}Xe (n,γ)	26·89	0·2 ± 0·1		D^{133}I
			^{132}Xe (d,p)	26·89			
			^{134}Xe ($n,2n$)	10·44			
			^{130}Te (α,n)	34·49			
			^{133}Cs (n,p)	100			
			^{235}U (n,f)		6·29%		
0·081	^{133}Ba	7·2y	^{132}Ba (n,γ)	0·097	7 ± 2		D^{133m}Ba
0·0812	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·0813	^{231}U	4·3d	^{231}Pa ($d,2n$)	‡			P^{227}Th
			^{231}Pa ($\alpha,p3n$)	‡			P^{231}Pa
			^{232}Th ($\alpha,5n$)	100‡			
0·0818	^{121m}Te	154d	^{118}Sn (α,n)	24·01			P^{121}Te
			^{121}Sb ($d,2n$)	57·25			
			^{121}Sb (p,n)	57·25			
0·0820	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
~0·082	^{255}Fm	21·5h				1	D^{255}E

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0·0821	^{231}U	4·3d	^{231}Pa (d,2n)	‡			P^{227}Th
			^{231}Pa (α,p3n)	‡			P^{231}Pa
			^{232}Th (α,5n)	100‡			
0·0825	^{191}Pt	3·00d	^{191}Ir (d,2n)	38·5			D^{191}Au
			^{192}Pt (n,2n)	0·78			
0·0829	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·0829	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·0829	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·083	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA)
							P^{211}Bi(AcC)
0·0830	^{157}Dy	8·2h					
0·0833	^{153}Gd	236d	^{152}Gd (n,γ)	0·20	< 25		
			^{153}Eu (d,2n)	52·23			
0·0836	^{104}Cd	59m	^{107}Ag (p,4n)	51·35			P (27m)^{104}Ag
0·0840	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br (d,2n)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·0840	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1	21	P^{243}Am
0·084	^{247}Bk	~10^4y				40	
0·0842	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	11	D^{235}U(AcU)
							P^{231}Pa
0·0842	^{231}U	4·3d	^{231}Pa (d,2n)	‡			P^{227}Th
			^{231}Pa (α,p3n)	‡			P^{231}Pa
			^{232}Th (α,5n)	100‡			
0·0842	^{170}Lu	1·7d	^{169}Tm (α,3n)	100			
0·0843	^{170}Tm	129d	^{169}Tm (n,γ)	100	130 ± 30		
			^{169}Tm (d,p)	100			
0·0844	^{228}Th (RdTh)	1·910y				1·6	D^{228}Ac (MsTh$_2$)
							P^{224}Ra(ThX)
							D^{232}U
							D^{228}Pa
0·0847	^{182}Re	12·7h	^{181}Ta (α,3n)	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			

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0·0847	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·0847	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·0847	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·0847	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ±2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·085	^{151}Nd	15m					P^{151}Pm
0·085	^{240}Np	60m	^{239}Np (n,γ)	†	25 ± 15*		
0·085	^{81m}Rb	31·5m					P^{81}Rb
0·086	^{77}As	38·7h	^{76}Ge (d,n)	7·67		0·13	D^{77}Ge
			^{235}U (n,f)		9·1 × 10^{-3}%		D^{77m}Ge
0·086	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As (α,2n)	100			
			^{74}Se (α,p)	0·87			
0·086	^{99}Rh	15·0d					
0·086	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th (α,p2n)	100‡			D^{237}Np
0·086	^{235}Np	410d	^{235}U (d,2n)	0·720 ‡			
			^{233}U (α,pn)	†			
0·0864	^{160m}Ho	5·0h					D^{160}Er
0·0865	^{155}Eu	1·7y	^{154}Eu (n,γ)	†	1500 ± 400*		D^{155}Sm
			^{154}Sm (d,n)	22·53			
			^{235}U (n,f)		~0·03%		
0·0867	^{155}Tb	5·6d					
0·0867	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 722		
			^{160}Gd (d,2n)	21·9			
0·0869	^{237}Np	2·20 × 10^{6}y				14	D^{237}U
							P^{233}Pa
0·0869	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12	2·7	P^{233}Pa
			^{232}Th (d,p)	100‡			
~0·087	^{111m}Ag	74s					D^{111}Pd
0·0873(?)	^{225}Ac	10·0d					D^{225}Ra
							P^{221}Fr
							D^{229}Pa
							D^{225}Th

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0·0875	^{109}Cd	470d	^{108}Cd (*n*,γ)	0·88			P^{109m}Ag
			^{106}Pd (α,*n*)	27·3			
			^{109}Ag (*d*,2*n*)	48·65			
			^{107}Ag (α,*np*)	51·35			
0·0875	^{109m}Ag	39·2s	^{109}Ag (γ,γ)	48·65			D^{109}Pd
							D^{109}Cd
0·0875	^{153}Tb	62h	^{151}Eu (α,2*n*)	47·77			P^{153}Gd
0·088	^{92m_2}Nb	5·9 × 10^{-6}s					
0·0883	^{176}Ta	8·0h	^{175}Lu (α,3*n*)	97·40			D^{176}W
0·0884	^{156m}Tb	5·5h	^{153}Eu (α,*n*)	52·23			
			^{156}Gd (*p*,*n*)	20·47			
0·0885	^{127m}Te	105d	^{126}Te (*n*,γ)	18·71	90 ± 20mb		P^{127}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb(16%)
			^{127}I (*n*,*p*)	100			
			^{235}U (*n*,*f*)		0·033%		
0·0887	^{123m}Te	104d	^{122}Te (*n*,γ)	2·46	1·1 ± 0·5		
			^{123}Sb (*d*,2*n*)	42·75			
0·0888	^{178}Ta	2·1h	^{175}Lu (α,*n*)	97·40			P^{178m}Hf
			^{178}Hf (*p*,*n*)	27·1			
0·0888	^{178m}Hf	4·8s					D (2·1h) ^{178}Ta
0·0889	^{176m}Lu	3·71h	^{175}Lu (*n*,γ)	97·40	35 ± 15		
			^{175}Lu (*d*,*p*)	97·40			
0·0890	^{156}Eu	15·4d	^{155}Eu (*n*,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (*n*,*f*)		0·013%		
0·089	^{176}Lu	2·4 × 10^{10}y					
0·089	^{120}Sb	5·8d	^{120}Sn (*d*,2*n*)	32·97			
			^{121}Sb (*d*,*p*2*n*)	57·25			
0·089	^{49}Cr	41·9m	^{46}Ti (α,*n*)	7·99			
			^{50}Cr (*n*,2*n*)	4·31			
			^{50}Cr (γ,*n*)	4·31			
0·0891	^{156}Tb	5·6d					
0·0894	^{175}Hf	70d	^{174}Hf (*n*,γ)	0·163			
			^{175}Lu (*d*,2*n*)	97·40			
			^{175}Lu (*p*,*n*)	97·40			
0·0898	^{231}Th(UY)	25·64h	^{230}Th (*n*,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·090	^{69}Ge	40·4h	^{69}Ga (*d*,2*n*)	60·2			D^{69}As
			^{69}Ga (*p*,*n*)	60·2			
			^{66}Zn (α,*n*)	27·81			
0·090	^{115}Sb	60m					
0·090	^{160}Ho	28m	^{159}Tb (α,3*n*)	100			
0·0904	^{155}Dy	10h					

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0·0905	^{187}Ir	13h	^{185}Re (α,2*n*)	37·07			
			^{188}Os (*d*,3*n*)	13·3			
0·0906	^{172}Lu	6·70d	^{169}Tm (α,*n*)	100			D^{172}Hf
			^{172}Yb (*p*,*n*)	21·82			
0·0908	^{208}At	5·5h	^{209}Bi (α,4*n*)	100			P^{209}Po
							P^{205}Bi
							D^{209}Rn
0·0909	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·0911	^{191}Au	3·0h	^{191}Ir (α,4*n*)	38·5			P^{191}Pt
			^{192}Pt (*d*,3*n*)	0·78			D^{191}Hg
0·09122	^{67}Ga	77·9h	^{66}Zn (*d*,*n*)	27·81			D^{67}Ge
			^{67}Zn (*p*,*n*)	4·11			
0·0913	^{164}Ho	36·7m	^{164}Dy (*p*,*n*)	28·18			
			^{165}Ho (*n*,2*n*)	100			
			^{165}Ho (γ,*n*)	100			
0·0913	^{147}Nd	11·06d	^{146}Nd (*n*,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (*d*,*p*)	17·18			
			^{235}U (*n*,*f*)		2·6%		
0·0914	^{234}Th(UX$_1$)	24·10d	^{232}Th (*n*,γ)	†	1400 ± 200*		D^{238}U
							P^{234m}Pa (UX$_2$)
							P^{234}Pa(UZ) (0·63%)
0·092	^{129}Cs	30·7h	^{127}I (α,2*n*)	100			D^{129}Ba
0·092	^{131}Ba	11·5d	^{130}Ba (*n*,γ)	0·101	10 ± 1		P^{131}Cs
0·092	^{67}Cu	58·5h	^{65}Cu (*n*,γ)	†	130 ± 40*		
			^{67}Zn (*n*,*p*)	4·11			
			^{68}Zn (γ,*p*)	18·56			
0·0922	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·0930	^{107m}Ag	44·3s	^{107}Ag (*n*,*n*)	51·35			D^{107}Cd
			^{107}Ag (γ,γ)	51·35			
0·0930	^{107}Cd	6·7h	^{106}Ag (*n*,γ)	1·22	1·0 ± 0·5		P^{107m}Ag
			^{107}Ag (*d*,2*n*)	51·35			
			^{107}Ag (*p*,*n*)	51·35			
0·093	^{180m}Ta	8·15h	^{181}Ta (*n*,2*n*)	99·9877			
			^{181}Ta (γ,*n*)	99·9877			
			^{182}W (γ,*pn*)	26·4			
0·093	^{76}Kr	9·7h					P^{76}Br
0·0932	^{178}Ta	2·1h	^{175}Lu (α,*n*)	97·40			P^{178m}Hf
			^{178}Hf (*p*,*n*)	27·1			
0·0932	^{178m}Hf	4·8s					D (2·1h) ^{178}Ta

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0·09326	^{67}Ga	77·9h	^{66}Zn (*d*,*n*)	27·81			D^{67}Ge
			^{67}Zn (*p*,*n*)	4·11			
0·0933	^{180m}Hf	5·5h	^{179}Hf (*n*,γ)	13·75			
0·0936	^{169}Yb	31·8d	^{168}Yb (*n*,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm (*d*,2*n*)	100			
0·0948	^{165}Dy	139·2m	^{164}Dy (*n*,γ)	28·18	2100 ± 300*		
0·0950	^{144}Ce	285d	^{143}Ce (*n*,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (*n*,*f*)		5·3%		Descendant
							^{144}Xe
~0·095	^{135}La	19·5h	^{133}Cs (α,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
0·095	^{235}U(AcU)	7·1 × 10^{8}y	^{234}U (*n*,γ)	0·0056‡	90 ± 30	9	P^{231}Th(UY)
0·0952	^{189}Ir	11d					D^{189}Pt
							P^{189m}Os
0·0960(?)	^{237}Pu	45·6d	^{235}U (α,2*n*)	0·720‡			
			^{237}Np (*d*,2*n*)	†			
0·096	^{79m}Se	3·91m	^{80}Se (*n*,2*n*)	49·82			D^{79}As
			^{79}Br (*n*,*p*)	50·52			
0·096	^{125}Xe	18·0h	^{122}Te (α,*n*)	2·46			P^{125}I
			^{124}Xe (*n*,γ)	0·096			D^{125}Cs
0·096	^{121}Xe	40m	^{127}I (*p*,7*n*)	100			P^{121}I
0·096	^{243}Pu	4·98h	^{242}Pu (*n*,γ)	†	19 ± 1		P^{243}Am
0·096	^{246}Cf	35·7h	^{243}Cm (α,*n*)	†		1·2 × 10^{-3}	P^{242}Cm
			^{244}Cm (α,2*n*)	†			D^{246}E
0·0965	^{97m}Tc	91d	^{97}Mo (*d*,2*n*)	9·45			D^{97}Ru
							(0·04%)
0·0965	^{191}Pt	3·00d	^{191}Ir (*d*,2*n*)	38·5			D^{191}Au
			^{192}Pt (*n*,2*n*)	0·78			
0·0966	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th
							(RdTh)
0·0967	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·097	^{75}Se	121d	^{74}Se (*n*,γ)	0·87	26 ± 6		
			^{75}As (*d*,2*n*)	100			
			^{75}As (*p*,*n*)	100			
0·097	^{149}Nd	2·0h	^{148}Nd (*n*,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (*d*,*p*)	5·72			
			^{150}Nd *n*,2*n*)	5·60			

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0·0973	^{184}Re	50d	^{181}Ta (α,*n*) ^{182}W (α,*pn*) ^{184}W (*p*,*n*) ^{183}W (*d*,*n*) ^{185}Re (*n*,2*n*)	99·9877 26·4 30·6 14·4 37·07		Weak	
0·0973	^{185}Ir	15h					
0·0973	^{153}Gd	236d	^{152}Gd (*n*,γ) ^{153}Eu (*d*,2*n*)	0·20 52·23	< 25		
0·0978	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·098	^{254}Fm	3·24h				0·028	D (37h)^{254}E
0·0985	^{195}Au	180d	^{193}Ir (α,2*n*) ^{194}Pt (*d*,*n*) ^{195}Pt (*d*,2*n*)	61·5 32·9 33·8			P^{195m}Pt(?) D^{195m}Hg D^{195}Hg
0·0989	^{240}Am	51h	^{237}Np (α,*n*) ^{239}Pu (*d*,*n*) ^{239}Pu (α,*p*2*n*)	† † †			
0·099	^{238}Pu	86·4y	^{238}U (*d*,2*n*) ^{238}U (α,4*n*) ^{235}U (α *n*)	99·276‡ 99·276‡ 0·720‡		8 × 10^{-3}	D^{238}Np D^{242}Cm
0·099(?)	^{246}Pu	10·85d	^{245}Pu (*n*,γ)	†	260 ± 150*		P^{246}Am
0·0991	^{195}Pb	17m					P^{195m}Tl
0·0991	^{195m}Pt	3·5d	^{196}Pt (γ,*n*)	25·2			D^{195}Au(?)
0·0991	^{183}Re	71d	^{181}Ta (α,2*n*) ^{183}W (*p*,*n*) ^{182}W (*d*,*n*)	99·9877 14·4 26·4			D^{183}Os
0·0991	^{195m}Tl	3·5s					D^{195}Pb
0·0991	^{183}Ta	5·0d	^{182}Ta (*n*,γ) ^{183}W (*n*,*p*) ^{184}W (γ,*p*)	† 14.4 30·6	17000 ± 2000*		
0·0992	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$) D^{234}Pa(UX$_2$) D^{234}Th(UX$_1$) (0·63%)
0·0993	^{231}Th(UY)	25·64h	^{230}Th (*n*,γ)	‡	35 ± 10*	2	D^{235}U(AcU) P^{231}Pa
0·0994	^{225}Ac	10·0d					D^{225}Ru P^{221}Fr D^{229}Pa D^{225}Th

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0·0998	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·0999	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{168}Er (p,n)	27·07			
			^{169}Tm (n,2n)	100			
0·1000	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn
							D^{207}At
0·100	^{151}Pm	27·5h					D^{151}Nd
0·100	^{153}Sm	47·1h	^{152}Sm (n,γ)	26·63	140 ± 40		
			^{152}Sm (d,p)	26·63			
			^{154}Sm (γ,n)	22·53			
			^{150}Nd (α,n)	5·60			
			^{154}Sm (n,2n)	22·53			
			^{235}U (n,f)		0·15%		
0·1001	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·1001	^{183}Re	12·7h	^{181}Ta (α,3n)	99·9877			D^{183}Os
			^{183}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·1001	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{183}W (d,2n)	26·4			
0·1002	^{204}Bi	11·6h	^{204}Pb (d,2n)	1.40			P^{204m}Pb
			^{203}Tl (α,3n)	29·50			D^{204}Po
0·1004	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra (AcX)
							D^{227}Pa
							D^{231}U
0·1007	^{231}Pa	3·43 × 10^{4}y	^{232}Th (d,3n)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·1008	^{185}Ir	15h					
0·1009	^{173}Lu	1·4y	^{173}Yb (p,n)	16·13			D^{173}Hf
0·101	^{83}Sr	33h					P^{83}Rb
							D^{83}Y
0·1012	^{155}Tb	5·6d					
0·1012	^{193m}Hg	10·0h	^{197}Au (p,5n)	100			P^{193}Hg
							P^{193m}Au

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0·1017	^{238}Np	2·10d	^{237}Np (n,γ)	†	169 ± 6		P^{238}Pu
			^{237}Np (d,p)	†			D^{242}Am
			^{238}U ($d,2n$)	99·276‡			
			^{238}U ($\alpha,p3n$)	99·276‡			
0·1019	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·1019	^{242}Cm	162·5d	^{239}Pu (α,n)	†			D^{242}Am
			^{241}Am (d,n)	†			D^{242m}Am
							D^{248}Cf
							P^{238}Pu
0·1020	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·102	^{180m}Ta	8·15h	^{181}Ta ($n,2n$)	99·9877			
			^{181}Ta (γ,n)	99·9877			
			^{182}W (γ,pn)	26·4			
0·1021	^{153}Tb	62h	^{151}Eu ($\alpha,2n$)	47·77			P^{153}Gd
0·1025	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·1026	^{231}Pa	3·43 × 10^{4}y	^{232}Th ($d,3n$)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·103	^{81m}Se	56·8m	^{80}Se (n,γ)	49·82	30 ± 10mb		P^{81}Se
			^{80}Se (d,p)	49·82			
			^{81}Br (n,p)	49·48			
			^{235}U (n,f)		0·008%		
0·103	^{241}Am	458y					D^{241}Pu
0·1031	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·1031	^{153}Gd	236d	^{152}Gd (n,γ)	0·20	< 25		
			^{153}Eu ($d,2n$)	52·23			
0·1032	^{161}Ho	2·5h	^{159}Tb ($\alpha,2n$)	100			D^{161}Er
			^{161}Dy (p,n)	18·88			
			^{160}Dy (d,n)	2·294			
0·104	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th ($\alpha,p2n$)	100‡			D^{237}Np
0·1044	^{186}Ir	15h					
0·1045	^{91m}Nb	64d	^{90}Zr (d,n)	51·46			
			^{94}Mo ($d,\alpha n$)	9·12			
0·105	^{183m}W	5·5s					

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0·105	^{155}Sm	23·5m	^{154}Sm (*n*,γ)	22·53	5·5 ± 1·1		P^{155}Eu
			^{154}Sm (*d*,*p*)	22·53			
			^{235}U (*n*,*f*)		0·031%		
0·105	^{188m}Re	18·7m	^{189}Os (γ,*p*)(?)	16·1			P^{188}Re
0·1053	^{155}Eu	1·7y	^{154}Eu (*n*,γ)	†	1500 ± 400*		D^{155}Sm
			^{154}Sm (*d*,*n*)	22·53			
			^{235}U (*n*,*f*)		~0·03%		
0·1054	^{155}Tb	5·6d					
0·106	^{135}Xe	18·0h	^{122}Te (α,*n*)	2·46			P^{135}I
			^{134}Xe (*n*,γ)	0·096			D^{135}Cs
0·1061	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (α,*p*2*n*)	99·276‡			P^{239}Pu
							D^{243}Am
0·1062	^{161}Tb	6·88d	^{160}Tb (*n*,γ)	†	525 ± 100*		D^{161}Gd
			^{160}Gd (*d*,*n*)	21·9			
			^{162}Dy (γ,*p*)	25·53			
0·1063	^{129m}Te	33·5d	^{128}Te (*n*,γ)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (*d*,*p*)	31·79			
			^{130}Te (*n*,2*n*)	34·49			
			^{235}U (*n*,*f*)		0·19%		
0·1064	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (α,*p*2*n*)	99·276‡			P^{239}Pu
							D^{243}Am
0·107	^{149}Gd	9·3d	^{147}Sm (α,2*n*)	15·07			
			^{151}Eu (*p*,3*n*)	47·77			
0·1071	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·1072	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·1074	^{160m}Ho	5·0h					D^{160}Er
0·1076	^{77}Kr	1·1h	^{74}Se (α,*n*)	0·87			
0·1079	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·1079	^{183}Re	71d	^{181}Ta (α,2*n*)	99·9877			D^{183}Os
			^{183}W (*p*,*n*)	14·4			
			^{182}W (*d*,*n*)	26·4			
0·108	^{78m}Br	6·4m	^{77}Se (*d*,*n*)	7·58			
			^{78}Se (*p*,*n*)	23·52			
			^{75}As (α,*n*)	100			
			^{79}Br (*n*,2*n*)	50·52			

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0·108	^{118m}Sb	3·5m	^{115}In (α,*n*)	95·77			P^{118}Sb(?)
			^{118}Sn (*p*,*n*)	24·01			D^{118}Te
0·108	^{165m}Dy	1·25m	^{164}Dy (*n*,γ)	28·18	510 ± 20		
0·1082	^{231}U	4·3d	^{231}Pa (*d*,2*n*)	‡			P^{227}Th
			^{231}Pa (α,*p*3*n*)	‡			P^{231}Pa
			^{232}Th (α,5*n*)	100‡			
0·1083	^{151}Tb	19h					
0·1086	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·109	^{234}Np	4·40d	^{235}U (*d*,3*n*)	0·720‡			D^{234}Pu
			^{235}U (α,*p*4*n*)	0·720‡			
			^{235}U (*p*,2*n*)	0·720‡			
			^{233}U (*d*,*n*)	†			
			^{233}U (α,*p*2*n*)	†			
0·1091	^{97}Ru	2·88d	^{96}Ru (*n*,γ)	5·57	0·21 ± 0·02		P^{97m}Tc (0·04%)
			^{96}Ru (*d*,*p*)	5·57			P^{97}Tc (99·96%)
			^{98}Ru (*n*,2*n*)	1·91			D^{97}Rh
			^{98}Ru (γ,*n*)	1·91			
			^{94}Mo (α,*n*)	9·12			
0·1091	^{232}Pa	1·31d	^{231}Pa (*n*,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (α,*p*3*n*)	100‡			
0·1095	^{200}Pb	21·5h					P^{200}Tl D^{200}Bi D^{204}Po
0·1097	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·1097	^{183}Re	71d	^{181}Ta (α,2*n*)	99·9877			D^{183}Os
			^{183}W (*p*,*n*)	14·4			
			^{182}W (*d*,*n*)	26·4			
0·1098	^{169}Yb	31·8d	^{168}Yb (*n*,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm (*d*,2*n*)	100			
0·1098	^{153}Yb	62h	^{151}Eu (α,2*n*)	47·77			P^{153}Gd
0·11	^{230}Th(Io)	8·0 × 10^{4}y				~1 × 10^{-4}	D^{234}U(U$_{II}$) P^{226}Ra D^{230}Pa
0·11	^{180}Re	2·4m					
0·110	^{184}Ta	8·7h	^{184}W (*n*,*p*)	30·6			
0·110	^{235}U(AcU)	7·1 × 10^{8}y	^{234}U (*n*,γ)	0·0056‡	90 ± 30	5	P^{231}Th(UY)

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0·110	^{238}Pu	2·85y	^{235}U (*α*,3*n*)	0·720‡		0·012	P^{234}U
			^{238}U (*d*,2*n*)	99·276‡			D^{242}Cm
			^{238}U (*α*,4*n*)	99·276‡			D^{238}Np
			^{237}Np (*d*,2*n*)	†			
0·110	^{125m}Xe	55s					D^{125}Cs (~0·1%)
0·110	^{125}Sb	2·0y	^{124}Sn (*d*,*n*)	5·98			D (9·4d) ^{125}Sn
			^{235}U (*n*,*f*)		0·023%		P^{125m}Te
0·110	^{146}Ce	13·9m					P^{146}Pr
0·110	^{151}Nd	15m					P^{151}Pm
0·110	^{125m}Te	58d	^{124}Te (*n*,*γ*)	4·61	5 ± 3		D^{125}Sb
0·111	^{158m}Tb	11·0s					
0·1112	^{184}Re	50d	^{181}Ta (*α*,*n*)	99·9877		14	
			^{182}W (*α*,*pn*)	26·4			
			^{184}W (*p*,*n*)	30·6			
			^{183}W (*d*,*n*)	14·4			
			^{185}Re (*n*,2*n*)	37·07			
0·1114	^{182}Re	64·0h	^{181}Ta (*α*,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·1115	^{191}Au	3·0h	^{191}Ir (*α*,4*n*)	38·5			P^{191}Pt
			^{192}Pt (*d*,3*n*)	0·78			D^{191}Hg
0·1116	^{171}Er	7·8h	^{170}Er (*n*,*γ*)	14·88	9 ± 2		P^{171}Tm
0·1119	^{156}Tb	5·6d					
0·112	^{19}O	29·4s	^{18}O (*n*,*γ*)	0·204	0·21 ± 0·04mb		
			^{19}F (*n*,*p*)	100			
0·112	^{149}Nd	2·0h	^{148}Nd (*n*,*γ*)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (*d*,*p*)	5·72			
			^{150}Nd (*n*,2*n*)	5·60			
0·112	^{166}Yb	54h					P^{166}Tm
0·112	^{125}Cs	45m	^{127}I (*α*,6*n*)	100			P^{125m}Xe (0·1%) P^{125}Xe
0·112	^{226}Th	30·9m				4·8	D^{230}U P^{222}Ra D^{226}Ac
0·1124	^{193}Au	15·8h	^{191}Ir (*α*,2*n*)	38·5			D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·1128	^{172}Lu	6·70d	^{169}Tm (*α*,*n*)	100			D^{172}Hf
			^{172}Yb (*p*,*n*)	21·82			
0·113	^{241}Am	458y					D^{241}Pu

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0·113	^{125}Sb	2·0y	^{124}Sn (*d*,*n*)	5·98			D (9·4d) ^{125}Sn
			^{235}U (*n*,*f*)		0·023%		P^{125m}Te
0·113	^{177}Ta	53h	^{175}Lu (α,2*n*)	97·40			D^{177}W
			^{176}Lu (α,3*n*)	2·60			
			^{177}Hf (*p*,*n*)	18·56			
0·1130	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·1130	^{177}Lu	6·75d	^{176}Lu (*n*,γ)	2·60	4000 ± 800		D^{177}Yb
			^{176}Lu (*d*,*p*)	2·60			
0·1131	^{187}Ir	13h	^{185}Re (α,2*n*)	37·07			
			^{188}Os (*d*,3*n*)	13·3			
0·1133	^{227}Th (RdAc)	18·17d					D^{227}Ac P^{223}Ra(AcX) D^{227}Pa D^{231}U
0·1137	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
0·1137	^{165}Tm	29h					P^{165}Er
0·1137	^{182}Re	12·7h	^{181}Ta (α,3*n*)	99·9877			D^{182}Os
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·1138	^{175}Hf	70d	^{174}Hf (*n*,γ)	0·163			
			^{175}Lu (*d*,2*n*)	97·40			
			^{175}Lu (*p*,*n*)	97·40			
0·1138	^{175}Yb	101h	^{174}Yb (*n*,γ)	31.84	60 ± 40		
			^{176}Yb (γ,*n*)	12·73			
0·1139	^{211}Rn	16h	^{209}Bi (α,2*n*)	100			P^{211}At P^{207}Po
0·1139	^{237}U	6·75d	^{236}U (*n*,γ)	†	6 ± 1		P^{237}Np
			^{238}U (*n*,2*n*)	99·276‡			D^{241}Pu
0·114	^{66}Ge	~150m					P^{66}Ga
0·114	^{149}Nd	2·0h	^{148}Nd (*n*,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (*d*,*p*)	5·72			
			^{150}Nd (*n*,2*n*)	5·60			
0·1140	^{193}Au	15·8h	^{191}Ir (α,2*n*)	38·5			D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·1143	^{192}Hg	5·7h					P^{192}Au
0·1144	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re

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γ-Energy (Mev)	Nuclide	Half-Life	Some Modes of Formation	Per Cent Abundance of Relevant Stable Isotope	Thermal Neutron Activation Cross Section (Barns) or Fission Yield	Per Cent Abundance of γ-Radiation	Radioactive Parent or Daughter of
0·115	^{183m}W	5·5s					
0·1151	^{212}Pb	10·64h					D^{216}Po
	(ThB)						(ThA)
							P^{212}Bi(ThC)
0·1152	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·1154	^{155}Dy	10h					
0·116	^{151}Pm	27·5h					D^{151}Nd
0·116	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·116	^{48}Cr	23h					P^{48}V
0·116	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$	38·5			P^{191}Pt
			^{192}Pt $(d,3n)$	0·78			D^{191}Hg
0·1164	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·1164	^{182}Re	12·7h	^{181}Ta $(\alpha,3n)$	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1164	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{183}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1165	^{210}At	8·3h	^{209}Bi $(\alpha,3n)$	100			P^{210}Po
							P^{206}Bi
0·1165	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg $(d,2n)$	23·13			
0·1167	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·1169	^{198}Pb	2·4h					
0·117	^{234}U(U$_{II}$)	2·48 × 10^{5}y	^{233}U (n,γ)	†	52 ± 2		D^{234m}Pa
							(UX$_2$)
							D^{234}Pa(UZ)
							P^{230}Th(Io)
0·117	^{151}Nd	15m					P^{151}Pm
0·117	^{57}Mn	1·7m				Strong	
0·117	^{239}Pu	24360y	^{238}Pu (n,γ)	†	403 ± 10	Very weak	D^{239}Np
			^{238}U $(\alpha,3n)$	99·276‡			P^{235m}U
0·1176	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·1179	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt

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0·118	^{65}Ga	15·2m	^{64}Zn (*d*,*n*)	48·89			P^{65}Zn
			^{64}Zn (*p*,*γ*)	48·89			
0·118	^{167}Yb	19m					
0·1182	^{169}Yb	31·8d	^{168}Yb (*n*,*γ*)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm (*d*,2*n*)	100			
0·1184	^{104}Ag	27m	^{106}Cd (*d*,*α*)	1·22			D^{104}Cd
0·119	^{177}Yb	1·9h	^{176}Yb (*n*,*γ*)	12·73	5·5 ± 1·0		P^{177}Lu
0·119	^{110m}In	5·0h	^{109}Ag (*α*,3*n*)	48·65			
0·1194	^{193}Au	15·8h	^{191}Ir (*α*,2*n*)	38·5			D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·120	^{90}Mo	5·7h					P^{90}Nb
							P^{90m}Nb
0·120	^{90m}Nb	24s					D^{90}Mo
0·120	^{149}Gd	9·3d	^{147}Sm (*α*,2*n*)	15·07			
			^{151}Eu (*p*,3*n*)	47·77			
0·120	^{147}Eu	24d	^{147}Sm (*p*,*n*)	15·07			D^{147}Gd
			^{147}Sm (*d*,2*n*)	15·07			
0·12	^{71}Zn	2·2m	^{74}Ge (*n*,*α*)	36·47			
0·12(?)	^{134}I	52·5m	^{235}U (*n*,*f*)		5·7%		D^{134}Te
0·12	^{209}Tl	2·2m					D^{213}Bi
							P^{209}Pb
0·12	^{208}At	1·6h					D^{212}Fr
							P^{208}Po
0·1204	^{183}Ta	5·0d	^{182}Ta (*n*,*γ*)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (*γ*,*p*)	30·6			
0·1206	^{147}Nd	11·06d	^{146}Nd (*n*,*γ*)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (*d*,*p*)	17·18			
			^{235}U (*n*,*f*)		2·6%		
0·1209	^{182}Re	64·0h	^{181}Ta (*α*,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·121	^{75}Se	121d	^{74}Se (*n*,*γ*)	0·87	26 ± 6		
			^{75}As (*d*,2*n*)	100			
			^{75}As (*p*,*n*)	100			
0·121	^{147}Pm	2·64y	^{235}U (*n*,*f*)		~0·6%	Very weak	D^{147}Nd
							P^{147}Sm
0·121	^{230}Pa	17·7d	^{232}Th (*d*,4*n*)	100‡			P^{230}U
			^{232}Th (*α*,*p*5*n*)	100‡			P^{230}Th(Io)
			^{230}Th (*d*,2*n*)	‡			P^{226}Ac
			^{231}Pa (*d*,*p*2*n*)	‡			
0·12194	^{57}Co	270d	^{56}Fe (*d*,*n*)	91·68			D^{57}Ni
			^{56}Fe (*p*,*γ*)	91·68			

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0·122	^{152}Eu	9·2h	^{151}Eu (*n*,γ)	47·77	1400 ± 300*		
			^{151}Eu (*d*,*p*)	47·77			
			^{153}Eu (*n*,2*n*)	52·23			
0·1222	^{152}Eu	12·7y					
0·1222	^{223}Ra (AcX)	11·68d				2	D^{227}Th (RdAc) D^{223}Fr(AcK) P^{219}Rn(An) D^{223}Ac
0·1226	^{181}Re	20h					
0·1227	^{195m}Hg	40·0h	^{197}Au (*d*,4*n*)	100			P^{195m}Au
			^{197}Au (*p*,3*n*)	100			P^{195}Hg
0·1227	^{186}Re	88·9h	^{185}Re (*n*,γ)	37·07	100 ± 20		
			^{187}Re (γ,*n*)	62·93			
			^{185}Re (*d*,*p*)	37·07			
			^{187}Re (*n*,2*n*)	62·93			
			^{186}W (*d*,2*n*)	28·4			
0·123	^{154}Eu	16y	^{153}Eu (*n*,γ)	52·23	420 ± 100*	35	
			^{153}Eu (*d*,*p*)	52·23			
0·123	^{191}Au	3·0h	^{191}Ir (α,4*n*)	38·5			P^{191}Pt
			^{192}Pt (*d*,3*n*)	0·78			D^{191}Hg
0·1232	^{154}Tb	8h	^{151}Eu (α,*n*)	47·77			
			^{153}Eu (α,3*n*)	52·23			
			^{154}Gd (*p*,*n*)	2·15			
0·1236	^{104}Cd	59m	^{107}Ag (*p*,4*n*)	51·35			P (27m) ^{104}Ag
0·1236	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Po (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·1239	^{173}Hf	23·6h	^{170}Yb (α,*n*)	3·03			P^{173}Lu
			^{171}Yb (α,2*n*)	14·31			
			^{172}Yb (α,3*n*)	21·82			
			^{175}Lu (*p*,3*n*)	97·40			
0·1240	^{171}Er	7·8h	^{170}Er (*n*,γ)	14·88	9 ± 2		P^{171}Tm
0·124	^{149}Nd	2·0h	^{148}Nd (*n*,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (*d*,*p*)	5·72			
			^{150}Nd (*n*,2*n*)	5·60			
0·124	^{127}Cs	6·3h	^{127}I (α,4*n*)	100			P^{127}Xe P^{127m}Xe (~0·01 %) D^{127}Ba
0·124	^{131}Ba	11·5d	^{130}Ba (*n*,γ)	0·101	10 ± 1		P^{131}Cs

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0·125	^{101}Rh	5y	^{100}Au (d,n)	12·7			
			^{101}Ru ($d,2n$)	17·0			
			^{101}Ru (p,n)	17·0			
0·125	^{159}Ho	33m					
0·125	^{127m}Xe	75s	^{127}I (p,n)	100			D^{127}Cs (0·01%)
0·125	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$) D^{234}Pa (UX$_2$) D^{234}Th (UX$_1$) (0·63%)
0·125	^{186}Ta	10·5m					
0·125	^{185}Ta	50m	^{186}W (γ,p)	28·4			
0·1255	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re ($d,2n$)	37·07			
0·1261	^{149}Gd	9·3d	^{147}Sm ($\alpha,2n$)	15·07			
			^{151}Eu ($p,3n$)	47·77			
0·1263	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
0·127	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·127	^{79m}Kr	55s	^{79}Br (p,n)	50·52			
0·1271	^{124m}Cs	3·2h	^{133}Cs (n,γ)	100	17 ± 4mb		
			^{133}Cs (d,p)	100			
			^{134}Xe ($d,2n$)	10·44			
			^{134}Xe (p,n)	10·44			
0·1272	^{57}Ni	36h	^{54}Fe (α,n)	5·84		14	P^{57}Co
			^{58}Ni ($n,2n$)	67·76			
			^{58}Ni (γ,n)	67·76			
0·1275	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·1286	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)

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0·1291	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl D (62m) ^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·1291	^{191m}Ir	4·9s					D^{191}Os
0·1291	^{191}Os	16·0d	^{190}Os (n,γ)	26·4	8 ± 3		D^{191m}Os P^{191m}Ir
0·1293	^{202m}Pb	3·62h					
0·1294	^{191}Pt	3·00d	^{191}Ir $(d,2n)$	38·5			D^{191}Au
			^{192}Pt $(n,2n)$	0·78			
0·1294	^{195}Au	180d	^{193}Ir $(\alpha,2n)$	61·5			P^{195m}Pt(?)
			^{194}Pt (d,n)	32·9			D^{195m}Hg
			^{195}Pt $(d,2n)$	33·8			D^{195}Hg
0·1299	^{195m}Pt	3·5d	^{196}Pt (γ,n)	25·2			D^{195}Au(?)
0·130	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·130	^{105m}Rh	45s					D^{105}Ru P^{105}Rh
0·130	^{241}Am	458y					D^{241}Pu
0·130	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$	38·5			P^{191}Pt
			^{192}Pt $(d,3n)$	0·78			D^{191}Hg
0·130	^{185m}W	1·62m	^{186}W (γ,n)	28·4			
~0·13	^{245}Cm	8 × 10^{3}y	^{244}Cm (n,γ)	†	15 ± 10*	5	D^{245}Bk P^{241}Pu
0·1302	^{197m}Au	7·2s					D^{197m}Hg (3%)
0·1302	^{197m}Hg	24h	^{196}Hg (n,γ)	0·146	3100 ± 1000*		P^{197m}Au (3%)
			^{196}Hg (d,p)	0·146			P^{197}Hg
			^{198}Hg $(n,2n)$	10·02			
			^{197}Au $(d,2n)$	100			
0·1305	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
0·1308	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·131	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·131	^{226}Th	30·9m				0·4	D^{230}U P^{222}Ra D^{226}Ac

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0·131	^{232}U	74y	^{232}Th $(\alpha,4n)$	100‡		0·075	D^{232}Pa
			^{231}Pa (d,n)	‡			D^{236}Pu
			^{231}Pa $(\alpha,p2n)$	‡			P^{228}Th (RdTh)
0·132(?)	^{98}Pd	17·5m					P^{98}Rh
0·132	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·132	^{140}Ba	12·80d	^{139}Ba (n,γ)	†	4 ± 1		P^{140}La
			^{235}U (n,f)		6·17%		Descendant ^{140}Xe
0·1327	^{90}Nb	14·60h	^{90}Zr $(d,2n)$	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
0·1330	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·133	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·133	^{224}Ac	2·9h				Strong	D^{228}Pa P^{220}Fr P^{224}Ra (ThX)
0·133	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$	38·5			P^{191}Pt
			^{192}Pt $(d,3n)$	0·78			D^{191}Hg
0·133	^{197m}Hg	24h	^{196}Hg (n,γ)	0·146	3100 ± 1000*		P^{197m}Au (3%)
			^{196}Hg (d,p)	0·146			P^{197}Hg
			^{198}Hg $(n,2n)$	10·02			
			^{197}Au $(d,2n)$	100			
0·1335	^{197}Tl	2·7h					P^{197}Hg
0·1335	^{144}Ce	285d	^{143}Ce (n,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (n,f)		5·3%		Descendant ^{144}Xe
0·1338	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·134	^{194}Hg	0·4s					
0·134	^{57}Mn	1·7m				Strong	
0·134(?)	^{243}Pu	4·98h	^{242}Pu (n,γ)	†	19 ± 1		P^{243}Am
0·1342	^{104}Cd	59m	^{107}Ag $(p,4n)$	51·35			P (27m) ^{104}Ag
0·1342	^{187}W	24·0h	^{186}W (n,γ)	28·4	34 ± 7		
			^{186}W (d,p)	28·4			
0·135	^{189}Au	42m					P^{189}Pt D^{189}Hg

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0·135	^{201}Tl	72h	^{197}Au (α,γ)	100			D^{201}Pb
			^{201}Hg (d,2n)	13·22			
0·1353	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb (α,2n)	14·31			
			^{172}Yb (α,3n)	21·82			
			^{175}Lu (p,3n)	97·40			
0·1355	^{193m}Pt	4·3d	^{192}Pt (n,γ)	0·78	90 ± 40		D^{193}Au
			^{194}Pt (n,2n)	32·9			D^{193m}Au (0·03%)
			^{192}Pt (d,p)	0·78			
			^{193}Ir (d,2n)	61·5			
0·1358	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU) P^{231}Pa
0·136	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As (d,2n)	100			
			^{75}As (p,n)	100			
0·136	^{147}Gd	29h					P^{147}Eu
0·1361	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br (d,2n)	50·52			
			^{79} Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·1362	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·1363	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir (n,2n)	61·5			
			^{192}Os (d,2n)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·13631	^{57}Co	270d	^{56}Fe (d,n)	91·68			D^{57}Ni
			^{56}Fe (p,γ)	91·68			
0·1365	^{192}Au	4·7h	^{191}Ir (α,3n)	38·5			D^{192}Hg
0·1365	^{181}W	145d	^{180}W (n,γ)	0·135	10 ± 10		
0·1370	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·137	^{116m}In	53·99m	^{115}In (n,γ)	95·77	155 ± 10	3	
			^{115}In (d,p)	95·77			
			^{116}Cd (p,n)	7·58			
0·137	^{228}Th (RdTh)	1·910y				0·26	D^{228}Ac (MsTh$_2$) P^{224}Ra(ThX) D^{232}U D^{228}Pa

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0·1372	^{186}Re	88·9h	^{185}Re (n,γ)	37·07	100 ± 20		
			^{187}Re (γ,n)	62·93			
			^{185}Re (d,p)	37·07			
			^{187}Re $(n,2n)$	62·93			
			^{186}W $(d,2n)$	28·4			
0·1372	^{186}Ir	15h					D^{186}Pt
0·1374	^{134m}Cs	3·2h	^{133}Cs (n,γ)	100	17 ± 4mb		
			^{133}Cs (d,p)	100			
			^{134}Xe $(d,2n)$	10·44			
			^{134}Xe (p,n)	10·44			
0·1376	^{175}Yb	101h	^{174}Yb (n,γ)	31·84	60 ± 40		
			^{176}Yb (γ,n)	12·73			
0·138	^{116}Ag	21·1m	^{116}Cd (γ,p)	7·58		Weak	P^{115}Cd (91%) P^{115m}Cd (9%)
0·1381	^{156}Ho	~1h					
0·1389	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		2	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
0·139	^{75m}Ge	48s	^{74}Ge (n,γ)	36·74	0·040 ± 0·008		
			^{75}As (n,p)	100			
0·1400	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb $(\alpha,2n)$	14·31			
			^{172}Yb $(\alpha,3n)$	21·82			
			^{175}Lu $(p,3n)$	97·40			
0·140	^{245}Am	1·98h					D^{245}Pu
0·140	^{186}Yb	54h					P^{186}Tm
0·140	^{99}Mo	66·0h	^{98}Mo (n,γ)	23·75	0·45 ± 0·10		P^{99m}Tc
			^{96}Zr (α,n)	2·80			
			^{98}Mo (d,p)	23·75			
			^{100}Mo $(n,2n)$	9·62			
			^{100}Mo (γ,n)	9·62			
			^{235}U (n,f)		6·2%		
0·140	^{99}Pd	21·6m					P (4·7h) ^{99}Rh
0·14	^{113m}Ag	1·2m					D^{113}Pd
0·14	^{189}Pt	11h					P^{189}Ir D^{189}Au
0·1403	^{99m}Tc	6·04h	^{99}Ru (n,p)	12·7			D^{99}Mo P^{99}Tc
0·1406	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi D^{210}Rn D^{206}At

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0·1409	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·1415	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,α)	15·86			
			^{92}Mo (γ,*pn*)	15·86			
0·1416	^{141}Ce	33·1d	^{140}Ce (*n*,γ)	88·48	0·31 ± 0·10		D^{141}La
			^{140}Ce (*d*,*p*)	88·48			Descendant
							^{141}Xe
			^{142}Ce (*n*,2*n*)	11·07			
			^{141}Pr (*n*,*p*)	100			
			^{235}U (*n*,*f*)		5·7%		
0·142	^{147}Gd	29h					P^{147}Eu
0·142	^{44m}Sc	19·5s					
0·142	^{144}Ce	13·9m					P^{144}Pr
0·142	^{230}Th(Io)	8·0 × 10^{4}y				0·07	D^{234}U(U$_{II}$)
							P^{226}Ra
							D^{230}Pa
0·1422	^{200}Pb	21·5h					P^{200}Tl
							D^{200}Bi
							D^{204}Po
0·1422	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·1423	^{99m}Tc	6·04h	^{99}Ru (*n*,*p*)	12·7			D^{99}Mo
							P^{99}Tc
0·1423	^{192}Hg	5·7h					P^{192}Au
0·1423	^{183}Re	71d	^{181}Ta (α,2*n*)	99·9877			D^{183}Os
			^{183}W (*p*,*n*)	14·4			
			^{182}W (*d*,*n*)	26·4			
0·143	^{235}U (AcU)	7·1 × 10^{8}y	^{234}U (*n*,γ)	0·0056‡	90 ± 30	12	P^{231}Th(UY)
0·1439	^{157}Dy	8·2h					
0·144	^{101}Rh	4·7d	^{101}Ru (*p*,*n*)	17·0			D^{101}Pd
			^{100}Ru (*d*,*n*)	12·7			
0·144	^{151}Pm	27·5h					D^{151}Nd
0·144	^{212}Bi(ThC)	60·5m					D^{212}Pb(ThB)
							P^{212}Po(ThC′)
							P^{208}Tl (ThC″)
							D^{216}At
0·1441	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			

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0·1441	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·1442	^{223}Ra (AcX)	11·68d				4·1	D^{227}Th (RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·1448	^{175}Yb	101h	^{174}Yb (n,γ)	31·84	60 ± 40		
			^{176}Yb (γ,n)	12·73			
0·145	^{237m}Pu	0·18s					D^{241}Cm
0·145	^{95}Ru	1·65h	^{96}Ru (n,2n)	5·57			
			^{92}Mo (α,n)	15·86			
0·145	^{127}Te	9·4h	^{126}Te (n,γ)	18·71	0·8 ± 0·2	0·007	D^{127m}Te
			^{126}Te (d,p)	18·71			D^{127}Sb(84%)
			^{128}Te (n,2n)	31·79			
			^{127}I (n,p)	100			
0·145	^{127}Xe	36·41d	^{126}Xe (n,γ)	0·090			D^{127}Cs
			^{127}I (p,n)	100			
			^{127}I (d,2n)	100			
			^{124}Te (α,n)	4·61			
0·145	^{34m}Cl	32·40m	^{31}P (α,n)	100			P^{34}Cl
			^{34}S (p,n)	4·215			
			^{33}S (d,n)	0·750			
0·145	^{237}Np	2·20 × 10^{6}y				0·8	D^{237}U
							P^{233}Pa
0·145	^{241}Pu	13·0y	^{240}Pu (n,y)	†	250 ± 40		P^{241}Am
			^{238}U (α,n)	99·276‡			P^{237}U
							D^{245}Cm
0·1452	^{144}Ce	285d	^{143}Ce (n,γ)	†	6·0 ± 0·7*		P^{144}Pr
			^{235}U (n,f)		5·3%		Descendant ^{144}Xe
0·1454	^{182}Os	13·5h	^{185}Re (p,3n)	37·07			P^{183}Re
0·146	^{177}Yb	1·9h	^{176}Yb (n,γ)	12·73	5·5 ± 1·0		P^{177}Lu
0·146	^{242}Bk	4·5h	^{241}Am (α,2n)	†			P^{243}Cm
			^{242}Cm (d,n)	†			
0·146	^{246}Cf	35·7h	^{243}Cm (α,n)	†		3·5 × 10^{-8}	P^{242}Cm
			^{244}Cm (α,2n)	†			D^{246}E
0·1460	^{192}Hg	5·7h					P^{193}Au
0·1461	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*		D^{235}U(AcU)
							P^{231}Pa
0·147	^{147}Gd	29h					P^{147}Eu

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0·1477	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1480	^{200}Pb	21·5h					P^{200}Tl
							D^{200}Bi
							D^{204}Po
0·148	^{123}Xe	2·1h	^{127}I $(p,5n)$	100			P^{123}I
							D^{123}Cs
0·148	^{229}Th	7340y	^{228}Th (n,γ)	‡	123 ± 15*		D^{233}U
							P^{225}Ra
0·1488	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1489	^{202m}Pb	3·62h					
0·1490	^{155}Tb	5·6d					
0·149	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·1494	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1495	^{85m}Kr	4·36h	^{84}Kr (n,γ)	56·90	0·10 ± 0·03		D^{85}Br
			^{84}Kr (d,p)	56·90			
			^{88}Sr (n,α)	82·56			
			^{85}Rb (n,p)	72·15			
0·1496	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·1499	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·150	^{225}Ac	10·0d					D^{225}Ra
							P^{221}Fr
							D^{229}Pa
							D^{225}Th
0·150	^{238}Pu	86·4y	^{238}U $(d,2n)$	99·276‡		1×10^{-3}	D^{238}Np
			^{238}U $(\alpha,4n)$	99·276‡			D^{242}Cm
			^{235}U (α,n)	0·720‡			
0·150	^{49}Cr	41·9m	^{46}Ti (α,n)	7·99			
			^{50}Cr $(n,2n)$	4·31			
			^{50}Cr (γ,n)	4·31			
0·150	^{111m}Cd	48·6m	^{110}Cd (n,γ)	12·39	0·2 ± 0·1		D^{111}In (0·1%)
			^{108}Pd (α,n)	26·7			
			^{109}Ag (α,pn)	48·65			
			^{112}Cd $(n,2n)$	24·07			

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0·150	^{85m}Sr	70m	^{84}Sr (*n*,*γ*)	0·56	< 1		
			^{85}Rb (*p*,*n*)	72·15			
			^{85}Rb (*d*,2*n*)	72·15			
0·15	^{82}Sr	25·5d					D^{82}Y
							P^{82}Rb
0·15	^{79}Rb	24m					
0·15	^{131}Te	24·8m	^{130}Te (*n*,*γ*)	34·49	0·22 ± 0·05		D^{131}Sb
			^{130}Te (*d*,*p*)	34·49			P^{131}I
							D^{131m}Te
0·151	^{83}Sr	33h					P^{83}Rb
							D^{83}Y
0·1517	^{197}Tl	2·7h					P^{197}Hg
0·1524	^{182}Ta	115·1d	^{181}Ta (*n*,*γ*)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
0·1524	^{182}Re	12·7h	^{181}Ta (*α*,3*n*)	99·9877			D^{182}Os
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·1524	^{182}Re	64·0h	^{181}Ta (*α*,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
0·1525	^{181}W	145d	^{180}W (*n*,*γ*)	0·135	10 ± 10		
0·153	^{123}Sn	39·5m	^{122}Sn (*n*,*γ*)	4·71	0·16 ± 0·04		
			^{122}Sn (*d*,*p*)	4·71			
			^{124}Sn (*n*,2*n*)	5·98			
0·153	^{136}Cs	12·9d	^{135}Cs (*n*,*γ*)	†	13 ± 4*		
			^{139}La (*n*,*α*)	99·911			
0·153	^{245}Am	1·98h					D^{245}Pu
0·153	^{234}Pa	6·66h	^{233}Pa (*n*,*γ*)	†	25 ± 4		P^{234}U(U$_{II}$)
	(UX$_2$)						
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$)
							(0·63%)
0·1537	^{151}Gd	150d	^{151}Eu (*d*,2*n*)	47·77			
0·1541	^{223}Ra	11·68d				5·5	D^{227}Th
	(AcX)						(RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·1543	^{230}U	20·8d	^{232}Th (*α*,6*n*)	100‡			D^{230}Pa
			^{231}Pa (*d*,3*n*)	‡			D^{234}Pu
			^{231}Pa (*α*,*p*4*n*)	‡			P^{226}Th
0·1546	^{166}Tm	7·7h	^{165}Ho (*α*,3*n*)	100			D^{166}Yb
			^{166}Er (*p*,*n*)	33·41			

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0·1550	^{188}Ir	41·5h	^{187}Re (α,3*n*)	62·93			D^{188}Pt
			^{185}Re (α,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·13			
			^{189}Os (*d*,3*n*)	16·1			
0·155	^{112m}In	20·7m	^{109}Ag (α,*n*)	48·65			P^{112}In
			^{111}Cd (*d*,*n*)	12·75			
			^{112}Cd (*p*,*n*)	24·07			
			^{113}In (*n*,2*n*)	4·23			
0·1551	^{188}Re	16·7h	^{187}Re (*n*,γ)	62·93	75 ± 15	9	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
0·1552	^{156}Tb	5·6d					
0·1557	^{193}Au	15·8h	^{191}Ir (α,2*n*)	38·5		0·35	D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·1558	^{155}Dy	10h					
0·156	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·1561	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·1564	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
0·1564	^{183}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{183}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·1574	^{192}Hg	5·7h					P^{192}Au
0·1577	^{242}Cm	162·5d	^{239}Pu (α,*n*)	†			D^{242}Am
			^{241}Am (*d*,*n*)	†			D^{242m}Am
							D^{246}Cf
							P^{238}Pu
0·1577	^{192}Au	4·7h	^{191}Ir (α,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
0·1580	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·158	^{230}U	20·8d	^{232}Th (α,6*n*)	100‡			D^{230}Pa
			^{231}Pa (*d*,3*n*)	‡			D^{234}Pu
			^{231}Pa (α,*p*4*n*)	‡			P^{226}Th
0·1581	^{226}Ac	29h					D^{230}Pa
							P^{226}Th

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0·1583	^{199}Au	3·14d	^{198}Au (n,γ)	†	26000 ± 1200		D^{199}Pt
			^{198}Pt (d,n)	7·19			
			^{199}Hg (n,p)	16·84			
0·1584	^{199}Tl	7·4h	^{197}Au $(\alpha,2n)$	100			D^{199}Pb
			^{199}Hg $(d,2n)$	16·84			
0·1586	^{223}Ra (AcX)	11·68d					D^{227}Th (RdAc) D^{223}Fr(AcK) P^{219}Rn(An) D^{223}Ac
0·1589	^{200}Pb	21·5h					P^{200}Tl D^{200}Bi D^{204}Po
0·159	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$	38·5			P^{191}Pt
			^{192}Pt $(d,3n)$	0·78			D^{191}Hg
0·159	^{241}Am	458y					D^{241}Pu
0·159	^{184}Re	2·2d	^{181}Ta (α,n)	99·9877			
			^{184}W (p,n)	30·6			
0·159	^{199m}Hg	42m	^{199}Hg (n,n)	16·84			
			^{198}Hg (d,p)	10·02			
			^{200}Hg $(n,2n)$	23·13			
0·159	^{117m}Sn	14·0d	^{116}Sn (n,γ)	14·24	6 ± 2mb		
			^{116}Sn (d,p)	14·24			
			^{114}Cd (α,n)	28·86			
0·159	^{47}Sc	3·43d	^{44}Ca (α,p)	2·06			D^{47}Ca
			^{48}Ti (γ,p)	73·99			
			^{47}Ti (n,p)	7·32			
0·159	^{123m}Te	104d	^{122}Te (n,γ)	2·46	1·1 ± 0·5		
			^{123}Sb $(d,2n)$	42·75			
0·159	^{123}I	13·0h	^{121}Sb $(\alpha,2n)$	57·25			D^{123}Xe
0·159	^{77m}Ge	54s	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
0·160	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As $(\alpha,2n)$	100			
			^{74}Se (α,p)	0·87			
0·160	^{77}As	38·7h	^{76}Ge (d,n)	7·67		0·26	D^{77}Ge
			^{235}U (n,f)		$9{\cdot}1 \times 10^{-3}\%$		D^{77m}Ge
0·160	^{179m}Hf	19s					
0·160	^{240}Np	60m	^{239}Np (n,γ)	†	25 ± 15*		
0·16	^{184}Ta	8·7h	^{184}W (n,p)	30·6			
0·16	^{165m}Dy	1·25m	^{164}Dy (n,γ)	28·18	510 ± 20		
0·16	^{71}Se	4·5m					
0·1601	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			

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0·1605	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·1605	^{183}Re	71d	^{181}Ta ($\alpha,2n$)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·1608	^{155}Tb	5·6d					
0·161	^{191}Au	3·0h	^{191}Ir ($\alpha,4n$)	38·5			P^{191}Pt
			^{192}Pt ($d,3n$)	0·78			D^{191}Hg
0·161	^{117m}In	1·90h					Descendant ^{117m}Cd
							D^{117}Cd
							P^{117}In
0·161	^{117}In	1·1h	^{116}Cd (d,n)	7·58			D^{117}Cd
			^{118}Sn (γ,p)	24·01			
0·161	^{117}Sb	2·8h	^{115}In ($\alpha,2n$)	95·77			
			^{116}Sn (d,n)	14·24			
			^{117}Sn (p,n)	7·57			
0·1613	^{175}Hf	70d	^{174}Hf (n,γ)	0·163			
			^{175}Lu ($d,2n$)	97·40			
			^{175}Lu (p,n)	97·40			
0·1614	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·1614	^{155}Dy	10h					
0·1614	^{183}Re	71d	^{181}Ta ($\alpha,2n$)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·1615	^{155}Tb	5·6d					
0·162	^{77m}Se	17·5s					D^{77}Br
0·162	^{117m}Sn	14·0d	^{116}Sn (n,γ)	14·24	6 ± 2mb		
			^{116}Sn (d,p)	14·24			
			^{114}Cd (α,n)	28·86			
0·162	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
0·162	^{140}Ba	12·80d	^{139}Ba (n,γ)	†	4 ± 1*		P^{140}La
			^{235}U (n,f)		6·17%		Descendant ^{140}Xe
0·1623	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			

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0·1623	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb (α,2n)	14·31			
			^{172}Yb (α,3n)	21·82			
			^{175}Lu (p,3n)	97·40			
0·1623	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·1626	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	<200		
			^{185}Re (p,n)	37·07			
			^{185}Re (d,2n)	37·07			
0·163	^{151}Pm	27·5h					D^{151}Nd
0·163	^{131}I	8·08d	^{130}Te (d,n)	34·49			D^{131}Te
			^{235}U (n,f)		2·8%		P^{131m}Xe (~1%)
0·163	^{139}Ba	84·0m	^{138}Ba (n,γ)	71·66	0·5 ± 0·1		D^{139}Cs
			^{138}Ba (d,p)	71·66			Descendant ^{139}Xe
			^{139}La (n,p)	99·911			
			^{142}Ce (n,α)	11·07			
			^{235}U (n,f)		6·3%		
0·163	^{52}Fe	8·3h	^{50}Cr (α,2n)	4·31		~100	P^{52m}Mn
			^{54}Fe (γ,2n)	5·84			
0·1633	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	0·2	D^{235}U(AcU) P^{231}Pa
0·1635	^{155}Tb	5·6d					
0·1639	^{131m}Xe	12·0d	^{131}Xe (n,n)	21·18			D^{131}I(~1%)
0·164(?)	^{105}Rh	36·5h	^{104}Ru (d,n)	18·5			D^{105m}Rh
			^{106}Pd (γ,p)	27·3			Descendant ^{105}Ru
0·164	^{212}Bi(ThC)	60·5m					D^{212}Pb(ThB) P^{212}Po (ThC′) P^{208}Tl (ThC″) D^{216}At
0·164	^{197m}Hg	24h	^{196}Hg (n,γ)	0·146	3000 ± 1000*		P^{197m}Au (3%)
			^{196}Hg (d,p)	0·146			P^{197}Hg
			^{198}Hg (n,2n)	10·02			
			^{197}Au (d,2n)	100			
0·1646	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1	3·6	P^{237}Np
			^{238}U (n,2n)	99·276‡			D^{241}Pu
0·165	^{83}Sr	33h					P^{83}Rb D^{83}Y

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0·165	^{129}Sb	4·2h					P^{129}Te
0·165	^{236}Pu	2·85y	^{235}U (α,3n)	0·720‡		6·6 × 10^{-4}	P^{232}U
			^{238}U (d,2n)	99·276‡			D^{240}Cm
			^{238}U (α,4n)	99·276‡			D^{236}Np
			^{237}Np (d,2n)	†			
~0·165	^{235}U(AcU)	7·1 × 10^{8}y	^{234}U (n,γ)	0·0056‡	90 ± 30	> 4	P^{231}Th(UY)
0·165	^{185m}W	1·62m	^{186}W (γ,n)	28·4			
0·166	^{88}Kr	2·77h	^{87}Kr (n,γ)		< 600		P^{88}Rb
							D^{88}Br
0·166	^{139}Ce	140d	^{138}Ce (n,γ)	0·250	0·6 ± 0·3		D^{139}Pr
			^{138}Ba (α,n)	7·81			
			^{139}La (d,2n)	99·911			
			^{139}La (p,n)	99·911			
0·166	^{181}Os	23m					
0·1662	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·1668	^{196}Pb	37m					P^{196}Tl
0·1672	^{201}Tl	72h	^{197}Au (α,γ)	100			D^{201}Pb
			^{201}Hg (d,2n)	13·22			
0·1679	^{183}Os	13·5h	^{185}Re (p,3n)	37·07			P^{183}Re
0·168	^{151}Pm	27·5h					D^{151}Nd
0·1686	^{211}Rn	16h	^{209}Bi (α,2n)	100			P^{211}At
							P^{207}Po
0·169	^{211}Rn	16h	^{209}Bi (α,2n)	100			P^{211}At
							P^{207}Po
0·169	^{228}Th (RdTh)	1·910y				0·09	D^{228}Ac (MsTh$_2$)
							P^{224}Ra (ThX)
							D^{232}U
							D^{228}Pa
0·1692	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·170	^{67}Ge	21m	^{70}Ge (d,p4n)	20·55			P^{67}Ga
0·170	^{153}Sm	47·1h	^{152}Sm (n,γ)	26·63	140 ± 40		
			^{152}Sm (d,p)	26·63			
			^{154}Sm (γ,n)	22·53			
			^{150}Nd (α,n)	5·60			
			^{154}Sm (n,2n)	22·53			
			^{235}U (n,f)		0·15%		
0·170	^{127}Xe	36·41d	^{126}Xe (n,γ)	0·090			D^{127}Cs
			^{127}I (p,n)	100			
			^{127}I (d,2n)	100			
			^{124}Te (α,n)	4·61			

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0·17	^{111m}Pd	5·5h	^{110}Pd (d,p)	11·8			P^{111}Ag
0·17	^{136}Pr	70m					
0·17	^{144}Pm	300h					
0·17	^{56}Ni	6·4d	^{54}Fe ($\alpha,2n$)	5·84			P^{56}Co
0·1702	^{204}Bi	11·6h	^{204}Pb ($d,2n$)	1·40			P^{204m}Pb
			^{203}Tl ($\alpha,3n$)	29·50			D^{204}Po
0·1707	^{183m}Os	10h					
0·1708	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·171	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12	0·7	P^{233}Pa
			^{232}Th (d,p)	100‡			
0·1715	^{173}Lu	1·4y	^{173}Yb (p,n)	16·13			D^{173}Hf
0·1715	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·172	^{111}In	2·81d	^{109}Ag ($\alpha,2n$)	48·65		~100	P^{111m}Cd (0·01 %)
			^{111}Cd (p,n)	12·75			
			^{111}Cd (d,n)	12·75			
0·1728	^{182}Re	64·0h	^{181}Ta ($a,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·173	^{70}Ga	21·1m	^{69}Ga (n,γ)	60·2	1·4 ± 0·3		
			^{71}Ga ($n,2n$)	39·8			
			^{69}Ga (d,p)	60·2			
			^{72}Ge (γ,pn)	27·37			
0·173	^{245}Cm	8 × 10^3y	^{244}Cm (n,γ)	†	15 ± 10*	14	D^{245}Bk
							P^{241}Pu
0·1731	^{197}Tl	2·7h					P^{197}Hg
0·1734	^{198}Tb	2·4h					
0·1734	^{192}Au	4·7h	^{191}Ir ($\alpha,3n$)	38·5			D^{192}Hg
			^{192}Pt ($d,2n$)	0·78			
0·1735	^{193}Au	15·8h	^{191}Ir ($\alpha,2n$)	38·5		2·0	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt ($d,3n$)	32·9			P^{193}Pt
0·174	^{129}Cs	30·7h	^{127}I ($\alpha,2n$)	100			D^{129}Ba
0·174	^{181}Os	23m					
0·1744	^{153}Tb	62h	^{151}Eu ($\alpha,2n$)	47·77			P^{153}Gd
0·1750	^{71}As	62h	^{70}Ge (d,n)	20·55			P^{71}Ge
			^{69}Ga ($\alpha,2n$)	60·2			
0·1750	^{151}Gd	150d	^{151}Eu ($d,2n$)	47·77			
0·175	^{165}Dy	139·2m	^{164}Dy (n,γ)	28·18	2100 ± 300*		

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0·175	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·175	^{127m}Xe	75s	^{127}I (p,n)	100			D^{127}Cs (0·01%)
0·175	^{237}Np	2·20 × 10^{6}y				0·1	D^{237}U
							P^{233}Pa
0·175	^{246}Pu	10·85d	^{245}Pu (n,γ)	†	260 ± 150*		P^{246}Am
0·175	^{185}Ta	50m	^{186}W (γ,p)	28·4			
0·1754	^{161}Ho	2·5h	^{159}Tb $(\alpha,2n)$	100			D^{161}Er
			^{161}Dy (p,n)	18·88			
			^{160}Dy (d,n)	2·294			
0·1759	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·1767	^{212}Pb (ThB)	10·64h					D^{216}Po(ThA) P^{212}Bi(ThC)
0·177	^{151}Pm	27·5h					D^{151}Nd
0·1772	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
0·1776	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·179	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·1794	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·1794	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1798	^{223}Ra (AcX)	11·68d				0·5	D^{227}Th (RdAc) D^{223}Fr (AcK) P^{219}Rn(An) D^{223}Ac
0·1798	^{195}Hg	9·5h	^{197}Au $(p,3n)$	100			D^{195m}Hg D^{195}Tl
0·180	^{159}Ho	33m					
0·180	^{182m}Ta	16·5m	^{181}Ta (n,γ)	99·9877	30 ± 10mb		
0·180	^{86}Y	14·6h	^{88}Sr $(p,3n)$	82·56			D^{86}Zr

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0·18	^{208}At	1·6h					D^{212}Fr P^{208}Po
0·18	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	~0·06	D^{235}U(AcU) P^{231}Pa
0·18(?)	^{167}Yb	19m					
0·18	^{172}Tm	63·6h				Weak	D^{172}Er
0·18	^{171}Hf	16·0h	^{170}Yb ($\alpha,3n$)	3·03			P (8·5d) ^{171}Lu
			^{175}Lu ($p,5n$)	97·40			
0·18	^{70}As	52m					D^{70}Se
0·1802	^{182}Os	21·9h	^{185}Re ($p,4n$)	37·07			P (13h) ^{182}Re
0·1803	^{151}Tb	19h					
0·1804	^{155}Tb	5·6d					
0·1805	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·1808	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·181	^{99}Mo	66·0h	^{98}Mo (n,γ)	23·75	0·45 ± 0·10		P^{99m}Tc
			^{96}Zr (α,n)	2·80			
			^{98}Mo (d,p)	23·75			
			^{100}Mo ($n,2n$)	9·62			
			^{100}Mo (γ,n)	9·62			
			^{235}U (n,f)		6·2%		
0·1815	^{172}Lu	6·70d	^{169}Tm (α,n)	100			D^{172}Hf
			^{172}Yb (p,n)	21·82			
0·1816	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·1817	^{131m}Te	30h	^{130}Te (n,γ)	34·49	< 8mb		P^{131}Te
			^{130}Te (d,p)	34·49			D^{131}Sb
			^{235}U (n,f)		0·44%		
0·1818	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U ($\alpha,p2n$)	99·276‡			P^{239}Pu
							D^{243}Am
0·1818	^{239}Am	12h	^{237}Np ($\alpha,2n$)	†			
			^{239}Pu (p,n)	†			
			^{239}Pu ($d,2n$)	†			
			^{239}Pu ($\alpha,p3n$)	†			
0·1820	^{156}Tb	5·6d					
0·182	^{122}Xe	19·5h	^{127}I ($p,6n$)	100			P^{122}I

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0·182	^{67}Cu	58·5h	^{66}Cu (*n*,γ) ^{67}Zn (*n*,*p*) ^{68}Zn (γ,*p*)	† 4·11 18·56	130 ± 40*		
0·1825	^{157}Dy	8·2h					
0·183	^{101}Tc	14·0m	^{100}Mo (*d*,*n*) ^{102}Ru (γ,*p*)	9·62 31·5			D^{101}Mo
0·184	^{166}Ho	> 30y					
0·184	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·184	^{230}Th(Io)	8·0 × 10^{4}y				1·4 × 10^{-2}	D^{234}U(U$_{II}$) P^{226}Ra D^{230}Pa
0·1841	^{206}Bi	6·4d	^{205}Tl (α,3*n*) ^{206}Pb (*d*,2*n*) ^{207}Pb (*d*,3*n*)	70·50 25·1 21·7			D^{206}Po D^{210}At
0·1845	^{67}Ga	77·9h	^{66}Zn (*d*,*n*) ^{67}Zn (*p*,*n*)	27·81 4·11			D^{67}Ge
0·1846	^{168}Tm	85d	^{165}Ho (α,*n*) ^{168}Er (*p*,*n*) ^{169}Tm (*n*,2*n*)	100 27·07 100			
0·1847	^{166}Tm	7·7h	^{165}Ho (α,3*n*) ^{166}Er (*p*,*n*)	100 33·41			D^{166}Yb
0·1848	^{162}Ho	67m	^{159}Tb (α,*n*) ^{162}Dy (*p*,*n*) ^{162}Dy (*d*,2*n*)	100 25·53 25·53			
0·185	^{226}Ac	29h					D^{230}Pa P^{226}Th
0·185	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
0·185	^{235}U(AcU)	7·1 × 10^{8}y	^{234}U (*n*,γ)	0·0056‡	90 ± 30	55	P^{231}Th(UY)
0·186	^{101}Tc	14·0m	^{100}Mo (*d*,*n*) ^{102}Ru (γ,*p*)	9·62 31·5			D^{101}Mo
0·186	^{66}Ge	~150m					P^{66}Ga
0·186	^{226}Ra	1622y					D^{230}Th(Io) P^{222}Rn(Rn)
0·186	^{190}Ir	3·2h	^{187}Re (α,*n*) ^{189}Os (*d*,*n*) ^{190}Os (*d*,2*n*)	62·93 16·1 26·4			P^{190m}Os

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0·186	^{190}Ir	11d	^{187}Re (α,n)	62·93			
			^{190}Os (d,2n)	26·4			
			^{191}Ir (n,2n)	38·5			
0·1861	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5		8·9	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·1865	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·1865	^{193}Hg	~6h					D^{193m}Hg
0·187	^{125}Xe	18·0h	^{122}Te (α,n)	2·46			P^{125}I
			^{124}Xe (n,γ)	0·096			D^{125}Cs
0·187	^{243}Bk	4·5h	^{241}Am (α,2n)	†			P^{243}Cm
			^{242}Cm (d,n)	†			
0·187	^{225}Ac	10·0d					D^{225}Ra
							P^{221}Fr
							D^{229}Pa
							D^{225}Th
0·187	^{190m}Os	9·5m					D (3·2h) ^{190}Ir
0·1875	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·1875	^{187}Ir	13h	^{185}Re (α,2n)	37·07			
			^{188}Os (d,3n)	13·3			
0·188	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·188	^{109m}Pd	4·75m	^{110}Pd n,2n)	11·8			
0·188	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd (n,2n)	5·60			
0·188	^{239}Cm	2·9h	^{239}Pu (α,4n)	†			
0·1895	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·190	^{114m}In	50·0d	^{113}In (n,γ)	4·23	56 ± 12		P^{114}In
			^{113}In (d,p)	4·23			
			^{114}Cd (p,n)	28·86			
			^{112}Cd (d,n)	12·26			
			^{115}In (γ,n)	95·77			
			^{115}In (n,2n)	95·77			
0·190	^{101}Rh	5y	^{100}Ru (d,n)	12·7			
			^{101}Ru (d,2n)	17·0			
			^{101}Ru (p,n)	17·0			

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0·19	^{137}Sb	88h	^{235}U (n,f)		0·094%		P^{137}Te(84%) P^{137m}Te (16%) D^{137}Sn
0·191	^{101}Mo	14·61m	^{100}Mo (n,γ) ^{100}Mo (d,p)	9·62 9·62	0·20 ± 0·05		P^{101}Tc
0·191	^{88}Kr	2·77h	^{87}Kr (n,γ)	†	< 600		P^{88}Rb D^{88}Br
0·191	^{59}Fe	45·1d	^{58}Fe (n,γ) ^{59}Co (n,p) ^{58}Fe (d,p)	0·31 100 0·31	0·98 ± 0·10	2·8	
0·191	^{197}Pt	18h	^{196}Pt (n,γ) ^{196}Pt (d,p) ^{198}Pt (γ,n) ^{198}Pt ($n,2n$) ^{200}Hg (n,α)	25·2 25·2 7·19 7·19 23·13	0·8 ± 0·1		
0·191	^{190}Re	2·8m					
0·1913	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$) ^{183}W (p,n) ^{183}W ($d,2n$)	99·9877 26·4 26·4			
0·1918	^{197}Hg	65h	^{197}Au ($d,2n$) ^{198}Hg ($n,2n$)	100 10·02			D^{197m}Hg D (2·8h) ^{197}Tl
0·1922	^{161}Tb	19h					
0·1926	^{183}Ta	5·0d	^{182}Ta (n,γ) ^{183}W (n,p) ^{184}W (γ,p)	† 14·4 30·6	17000 ± 2000*		
0·1926	^{183}Re	71d	^{181}Ta ($\alpha,2n$) ^{183}W (p,n) ^{182}W (d,n)	99·9877 14·4 26·4			D^{183}Os
0·193	^{81m}Kr	13s	^{81}Br (p,n)	49·48			D^{81}Rb
0·193	^{138}Cs	32·2m	^{138}Ba (n,p) ^{137}Cs (n,γ)	71·66 †	< 2	0·8	D^{138}Xe Descendant ^{138}I
0·1935	^{170}Lu	1·7d	^{169}Tm ($\alpha,3n$)	100			
0·1948	^{166}Tm	7·7h	^{165}Ho ($\alpha,3n$) ^{166}Er (p,n)	100 33·41			D^{166}Yb
0·1950	^{209}At	5·5h	^{309}Bi ($\alpha,4n$)	100			P^{209}Po P^{205}Bi D^{209}Rn
0·195(?)	^{161}Er	3·1h					P^{161}Ho
0·195	^{233}Th	22·12m	^{232}Th (n,γ) ^{232}Th (d,p)	100‡ 100‡	7·33 ± 0·12	0·3	P^{233}Pa
0·195	^{198}Tl	5·3h					

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0·1952	^{153}Tb	62h	^{151}Eu $(\alpha,2n)$	47·77			P^{153}Gd
0·196	^{129m}Xe	8·0d	^{128}Xe (n,γ)	1·919	< 5		
0·1965	^{160m}Ho	5·0h					D^{160}Er
0·197	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 22		
			^{160}Gd $(d,2n)$	21·9			
0·197	^{199}Pt	31m	^{198}Pt (n,γ)	7·19	3·9 ± 0·8		
			^{198}Pt (d,p)	7·19			
			^{202}Hg (n,α)	29·80			
0·1971	^{183}Os	13·5h	^{185}Re $(p,3n)$	37·07			P^{183}Re
0·1980	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
0·198	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd $(n,2n)$	5·60			
0·1982	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·1983	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·1983	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·1987	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{168}Er (p,n)	27·07			
			^{169}Tm $(n,2n)$	100			
0·199	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As $(d,2n)$	100			
			^{75}As (p,n)	100			
0·199	^{120}Sb	5·8d	^{120}Sn $(d,2n)$	32·97			
			^{121}Sb $(d,p2n)$	57·25			
0·199	^{75}Ge	82m	^{74}Ge (n,γ)	36.74	0·21 ± 0·08		
			^{74}Ge (d,p)	36·74			
			^{76}Ge $(n,2n)$	7·67			
			^{75}As (n,p)	100			
0·1992	^{156}Eu	15·4d	^{155}Eu (n,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (n,f)		0·013%		
0·1994	^{166}Tb	5·6d					
0·200	^{19}O	29·4s	^{18}O (n,γ)	0·204	0·21 ± 0·04mb		
			^{19}F (n,p)	100			
0·200	^{237}Np	2·20 × 10^{6}y				0·3	D^{237}U P^{233}Pa
0·200	^{244}Bk	4·4h	^{241}Am (α,n)	†			P^{244}Cm
~0·200	^{235}U(AcU)	7·1 × 10^{8}y	^{234}U (n,γ)	0·0056‡	90 ± 30	> 4	P^{231}Th(UY)

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0·200	^{229}Th	7340y	^{228}Th (n,γ)	‡	123 ± 15*		D^{233}U P^{225}Ra
0·20	^{160}Ho	28m	^{159}Tb ($\alpha,3n$)	100			
0·20	^{188}Pt	10·0d					P^{188}Ir D^{188}Au
0·20	^{186}Ta	10·5m					
0·20	^{226}Th	30·9m				0·4	D^{230}U P^{222}Ra D^{226}Ac
0·20(?)	^{134}I	52·5m	^{235}U (n,f)		5·7%		D^{134}Te
0·2	^{180m}Ta	8·15h	^{181}Ta ($n,2n$)	99·9877		Very weak	
			^{181}Ta (γ,n)	99·9877			
			^{182}W (γ,pn)	26·4			
0·2	^{157}Eu	15·4h	^{235}U (n,f)		$7·4 \times 10^{-3}$%		
0·2013	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir ($n,2n$)	61·5			
			^{192}Os ($d,2n$)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·2021	^{176}Ta	8·0h	^{175}Lu ($\alpha,3n$)	97·40			D^{176}W
0·2025	^{206}Bi	6·4d	^{205}Tl ($\alpha,3n$)	70·50			D^{206}Po
			^{206}Pb ($d,2n$)	25·1			D^{210}At
			^{207}Pb ($d,3n$)	21·7			
0·203	^{176}Lu	$2·4 \times 10^{10}$y					
0·203	^{205}Hg	5·5m	^{204}Hg (n,γ)	6·85	0·43 ± 0·10		
			^{204}Hg (d,p)	6·85			
			^{205}Tl (n,p)	70·50			
0·203	^{127}Te	9·4h	^{126}Te (n,γ)	18·71	0·8 ± 0·2		D^{127m}Te
			^{126}Te (d,p)	18·71			D^{127}Sb (84%)
			^{128}Te ($n,2n$)	31·79			
			^{127}I (n,p)	100			
0·203	^{238}Pu	86·4y	^{238}U ($d,2n$)	99·276‡		4×10^{-6}	D^{238}Np
			^{238}U ($\alpha,4n$)	99·276‡			D^{242}Cm
			^{235}U (α,n)	0·720‡			
0·203	^{127}Xe	36·41d	^{126}Xe (n,γ)	0·090			D^{127}Cs
			^{127}I (p,n)	100			
			^{127}I ($d,2n$)	100			
			^{124}Te (α,n)	4·61			
0·2033	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·2038	^{172}Lu	6·70d	^{169}Tm (α,n)	100			D^{172}Hf
			^{172}Yb (p,n)	21·82			

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0·2042	^{95m}Tc	60d	^{95}Mo $(d,2n)$	15·70			
			^{95}Mo (p,n)	15·70			
			^{94}Mo (d,n)	9·12			
0·2050	^{227}Th	18·17d					D^{227}Ac
	(RdAc)						
							P^{223}Ra(AcX)
							D^{227}Pa
							D^{231}U
0·205	^{109}In	4·3h	^{107}Ag $(\alpha,2n)$	51·35			Descendant
							^{109}Sn
			^{106}Cd (α,p)	1·22			
			^{106}Cd (d,n)	1·22			
			^{106}Cd (p,γ)	1·22			
0·205	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d)
							^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·205	^{228}Th	1·910y				0·03	D^{228}Ac
	(RdTh)						(MsTh$_2$)
							P^{224}Ra(ThX)
							D^{232}U
							D^{228}Pa
0·2051	^{183}Re	71d	^{181}Ta $(2n)$	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·2051	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·2052	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·2054	^{192}Au	4·7h	^{191}Ir $(\alpha,3n)$	38·5			D^{192}Hg
			^{192}Pt $(d,2n)$	0·78			
0·2057	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir $(n,2n)$	61·5			
			^{192}Os $(d,2n)$	41·0			
			^{194}Pt (γ,pn)	32·9			
0·2057	^{165}Dy	10h					
0·206	^{230}Th(Io)	8·0 × 10^{4}y				$\sim 5 \times 10^{-6}$	D^{234}U(U$_{\mathrm{II}}$)
							P^{226}Ra
							D^{230}Pa
0·206	^{67}Ga	77·9h	^{66}Zn (d,n)	27·81			D^{67}Ge
			^{67}Zn (p,n)	4·11			
0·2079	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1	24	P^{237}Np
			^{238}U $(n,2n)$	99·276‡			D^{241}Pu

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0·2080	^{199}Au	3·14d	^{198}Au (n,γ)	†	26000 ± 1200		D^{199}Pt
			^{198}Pt (d,n)	7·19			
			^{199}Hg (n,p)	16·84			
0·208	^{167m}Er	2·5s					D^{167}Tm
0·208	^{177}Ta	53h	^{175}Lu ($\alpha,2n$)	97·40			D^{177}W
			^{176}Lu ($\alpha,3n$)	2·60			
			^{177}Hf (p,n)	18·56			
0·208	^{147}Eu	24d	^{147}Sm (p,n)	15·07			D^{147}Gd
			^{147}Sm ($d,2n$)	15·07			
			^{148}Sm ($d,3n$)	11·27			
0·208	^{151}Pm	27·5h					D^{151}Nd
0·2081	^{199}Tl	7·4h	^{197}Au ($\alpha,2n$)	100			D^{199}Pb
			^{199}Hg ($d,2n$)	16·84			
0·2082	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{183}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·2084	^{177}Lu	6·75d	^{176}Lu (n,γ)	2·60	4000 ± 800		D^{177}Yb
			^{176}Lu (d,p)	2·60			
0·2086	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·2088	^{183}Re	71d	^{181}Ta ($\alpha,2n$)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·2088	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·2093	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·2099	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U ($\alpha,p2n$)	99·276‡			P^{239}Pu
							D^{243}Am
0·2099	^{239}Am	12h	^{237}Np ($\alpha,2n$)	†			
			^{239}Pu (p,n)	†			
			^{238}Pu ($d,2n$)	†			
			^{238}Pu ($\alpha,p3n$)	†			
0·2099	^{183}Re	71d	^{181}Ta ($\alpha,2n$)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			

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0·2099	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·210	^{107m}Pd	21·3s					
0·210	^{121}I	2·0h	^{121}Sb $(\alpha,4n)$	57·25			P^{121}Te
							D^{121}Xe
0·210	^{243}Cm	35y	^{242}Cm (n,γ)	†	20 ± 10*		D^{243}Bk
0·210	^{241}Am	458y					D^{241}Pu
0·210	^{136}I	86s	^{235}U (n,f)		3·1%		
0·21	$^{79\ 80m}$Br	5·0s					
0·21(?)	^{184}Re	50d	^{181}Ta (α,n)	99·9877			
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re $(n,2n)$	37·07			
0·21	^{184}Ta	8·7h	^{184}W (n,p)	30·6			
0·21	^{129}Te	72m	^{128}Te (n,γ)	31·79	0·13 ± 0·03		D^{129m}Te
			^{128}Te (d,p)	31·79			D^{129}Sb
			^{130}Te $(n,2n)$	34·49			
			^{130}Te (γ,n)	34·49			
0·21	^{129m}Te	33·5d	^{128}Te (n,γ)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (d,p)	31·79			
			^{130}Te $(n,2n)$	34·49			
			^{235}U (n,f)		0·19%		
0·21	^{92}Y	3·60h	^{92}Zr (n,p)	17·11			D^{92}Sr
			^{94}Zr (d,α)	17·40			
0·21	^{65}Zn	245d	^{64}Zn (n,γ)	48·89	0·44 ± 0·05		D^{65}Ga
			^{64}Zn (d,p)	48·89			
			^{65}Cu (p,n)	30·9			
			^{65}Cu $(d,2n)$	30·9			
0·2106	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·211	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{146}Nd $(d,{}_{p})$	5·72			
			^{150}Nd $(n,2n)$	5·60			
0·212	^{228}Th (RdTh)	1·910y				0·27	D^{228}Ac (MsTh$_2$)
							P^{224}Ra(ThX)
							D^{232}U
							D^{228}Pa
0·2122	^{153}Tb	62h	^{151}Eu $(\alpha,2n)$	47·77			P^{153}Gd
0·213	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		3·7 × 10^{-2}%		

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0·2134	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·2137	^{178}Ta	2·1h	^{175}Lu (α,n)	97·40			P^{178m}Hf
			^{178}Hf (p,n)	27·1			
0·2137	^{178m}Hf	4·8s					D (2·1h)
							^{178}Ta
0·214	^{126}Sb	2·0y	^{124}Sn (d,n)	5·98			
			^{235}U (n,f)		0·023%		D (9·4d)
							^{125}Sn
							P^{125m}Te
0·214	^{121m}Te	154d	^{118}Sn (α,n)	24·01			P^{121}Te
			^{121}Sb $(d,2n)$	57·25			
			^{121}Sb (p,n)	57·25			
0·2144	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·215	^{246}Pu	10·85d	^{245}Pu (n,γ)	†	260 ± 150*		P^{246}Am
0·215	^{223}Fr	22m				3	D^{227}Ac
	(AcK)						
							P^{223}Ra
							(AcX)
							P^{219}At
0·215	^{77m}Ge	54s	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
0·215	^{127}Te	9·4h	^{126}Te (n,γ)	18·71	0·8 ± 0·2		D^{127m}Te
			^{126}Te (d,p)	18·71			D^{127}Sb
							(84%)
			^{128}Te $(n,2n)$	31·79			
			^{127}I (n,p)	100			
0·215	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$	38·5			P^{191}Pt
			^{192}Pt $(d,3n)$	0·78			D^{191}Hg
0·215	^{160m}Ho	5·0h					D^{160}Er
0·2154	^{166}Tm	7·7h	^{165}Ho $(\alpha,3n)$	100			D^{166}Yb
			^{166}Er (p,n)	33·41			
0·2157	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·2160	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·216	^{180m}Hf	5·5h	^{179}Hf (n,γ)	13·75			
0·216	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	>22		
			^{160}Gd $(d,2n)$	21·9			
0·216	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		7	
			^{98}Mo (d,α)	23·75			

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0·216	^{221}Fr	4·8m				14	D^{225}Ac
							P^{217}At
							D^{221}Rn
0·216	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·2161	^{97}Ru	2·88d	^{96}Ru (n,γ)	5·57	0·21 ± 0·02		P^{97m}Tc
							(0·04%)
			^{96}Ru (d,p)	5·57			P^{97}Tc
							(99·96%)
			^{98}Ru ($n,2n$)	1·91			D^{97}Rh
			^{98}Ru (γ,n)	1·91			
			^{94}Mo (α,n)	9·12			
0·217	^{224}Ac	2·9h				Strong	D^{228}Pa
							P^{220}Fr
							P^{224}Ra(ThX)
0·217	^{147}Gd	29h					P^{147}Eu
0·217	^{178m}Hf	19s					
0·2173	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·218	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	0·05	D^{235}U(AcU)
							P^{231}Pa
0·2181	^{193m}Au	3·9s					P^{193m}Pt
							(0·03%)
							D^{193m}Hg
0·219	^{135}La	19·5h	^{133}Cs ($\alpha,2n$)	100			D^{135}Ce
			^{134}Ba (d,n)	2·42			
			^{135}Ba (p,n)	6·59			
0·2191	^{204}Bi	11·6h	^{204}Pb ($d,2n$)	1·40			P^{204m}Pb
			^{203}Tl ($\alpha,3n$)	29·50			D^{204}Po
0·2193	^{165}Tm	29h					P^{165}Er
0·22	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag ($n,2n$)	51·35			
0·22	^{107}In	30m	^{106}Cd (p,γ)	1·22			
			^{106}Cd (d,n)	1·22			
0·220	^{43}Kr	22·4h	^{40}Ar (α,p)	99·600			
0·22	^{57}Mn	1·7m				Weak	
0·22	^{231}U	4·3d	^{231}Pa ($d,2n$)	‡			P^{227}Th
			^{231}Pa ($\alpha,p3n$)	‡			P^{231}Pa
			^{232}Th ($\alpha,5n$)	100‡			
0·220	^{104}Rh	130m					

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0·22(?)	^{179}W	5·2m	^{181}Ta (p,3n)	99·9877			
0·22	^{146}Ce	13·9m					P^{146}Pr
0·22	^{135}Pr	22m					P^{135}Ce
0·22(?)	^{180m}W	$5{\cdot}5 \times 10^{-3}$s					
0·2210	^{155}Tb	5·6d					
0·2219	^{204}Bi	11·6h	^{204}Pb (d,2n)	1·40			P^{204m}Pb
			^{203}Tl (α,3n)	29·50			D^{204}Po
0·2219	^{197m}Pb	42m					
0·2220	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn
							D^{207}At
0·2221	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·2221	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·2225	^{197m}Tl	0·54s					
0·2227	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn
							D^{207}At
0·224	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·2240	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn
							D^{207}At
0·225	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa (UX$_2$)
							D^{234}Th(UX$_1$) (0·63%)
0·225	^{85m}Sr	70m	^{84}Sr (n,γ)	0·56	< 1		
			^{85}Rb (p,n)	72·15			
			^{85}Rb (d,2n)	72·15			
0·226	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd (n,2n)	5·60			
0·226	^{147}Gd	29h					P^{147}Eu
0·2261	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·2264	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U (α,p2n)	99·276‡			P^{239}Pu
							D^{243}Am

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0·2265	^{239}Am	12h	^{237}Np $(\alpha,2n)$	†			
			^{239}Pu (p,n)	†			
			^{239}Pu $(d,2n)$	†			
			^{239}Pu $(\alpha,p3n)$	†			
0·227	^{180}Re	18m					
0·2270	^{155}Dy	10h					
0·227	^{115}Ag	21·1m	^{116}Cd (γ,p)	7·58		Weak	P^{115}Cd(91%) P^{115m}Cd(9%)
0·2275	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·228	^{243}Cm	35y	^{242}Cm (n,γ)	†	20 ± 10*		D^{243}Bk
0·2283	^{239}Am	12h	^{237}Np $(\alpha,2n)$	†			
			^{239}Pu (p,n)	†			
			^{239}Pu $(d,2n)$	†			
			^{239}Pu $(\alpha,p3n)$	†			
0·2284	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U $(\alpha,p2n)$	99·276‡			P^{239}Pu D^{243}Am
0·229	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		1·6	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
0·2293	^{182}Re	12·7h	^{181}Ta $(\alpha,3n)$	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·2293	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·2293	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·2295	^{147}Gd	29h					P^{147}Eu
0·2296	^{175}Hf	70d	^{174}Hf (n,γ)	0·163			
			^{175}Lu $(d,2n)$	97·40			
			^{175}Lu (p,n)	97·40			
0·230	^{115}Cd	53h	^{114}Cd (n,γ)	28·86	1·1 ± 0·3		P^{115m}In
			^{114}Cd (d,p)	28·86			D^{115}Ag (91%)
			^{116}Cd $(n,2n)$	7·58			
			^{235}U (n,f)		0·011%		
0·230	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
0·23	^{128}Ba	97m					P^{128}Cs

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0·230	^{234m}Pa	1·175m	^{233}Pa (n,γ)	†	43 ± 5		D^{234}Th(UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
0·230	^{245}Am	1·98h					D^{245}Pu
0·23	^{80}As	15m					P^{80}Ge
0·23	^{92}Sr	2·60h	^{235}U (n,f)		5·0%		P^{92}Y
0·23	^{184}Re	50d	^{181}Ta (α,n)	99·9877		~0·4	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re $(n,2n)$	37·07			
0·2303	^{226}Ac	29h					D^{226}Pa
							P^{226}Th
0·231	^{132}Te	77·7h	^{235}U (n,f)		4·4%		P^{132}I
							D^{132}Sb
0·231	^{95}Zr	65d	^{94}Zr (n,γ)	17·40	0·09 ± 0·03		P^{95}Nb
			^{94}Zr (d,p)	17·40			P^{95m}Nb
			^{235}U (n,f)		6·0%		
0·231	^{95m}Nb	90h					D^{95}Zr
							P^{95}Nb
0·231	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5		0·55	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·232	^{230}U	20·8d	^{232}Th $(\alpha,6n)$	100‡		0·24	D^{230}Pa
			^{231}Pa $(d,3n)$	‡			D^{234}Pu
			^{231}Pa $(\alpha,p4n)$	‡			P^{226}Th
0·232	^{228}Ac	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra
	(MsTh$_2$)						(MsTh$_1$)
							P^{228}Th
							(RdTh)
0·232	^{211}Rn	16h	^{209}Bi $(\alpha,2n)$	100			P^{211}At
							P^{207}Po
0·232	^{143}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant
							^{143}Xe
0·232	^{151}Pm	27·5h					D^{151}Nd
0·233	^{133m}Xe	2·3d	^{132}Xe (n,γ)	26·89			D^{133}I(2·4%)
0·233	^{85m}Sr	70m	^{84}Sr (n,γ)	0·56	< 1		
			^{85}Rb (p,n)	72·15			
			^{85}Rb $(d,2n)$	72·15			
0·2334	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re $(d,2n)$	37·07			

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0·234	^{234}Np	4·40d	^{235}U (d,3n)	0·720‡			D^{234}Pu
			^{235}U (α,p4n)	0·720‡			
			^{235}U (p,2n)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U (α,p2n)	†			
0·2340	^{197m}Pb	42m					
0·2342	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1		P^{237}Np
			^{238}U (n,2n)	99·276‡			D^{241}Pu
0·2343	^{206}Bi	6·4d	^{205}Tl (α,3n)	70·50			D^{206}Po
			^{206}Pb (d,2n)	25·1			D^{210}At
			^{207}Pb (d,3n)	21·7			
0·2346	^{227}Th (RdAc)	18·17d					D^{237}Ac
							P^{223}Ra(AcX)
							D^{227}Pa
							D^{231}U
0·235	^{122}Xe	19·5h	^{127}I (p,6n)	100			P^{122}I
0·235	^{230}Th(Io)	8·0 × 10^{4}y				~5 × 10^{-6}	D^{234}U(U$_{II}$)
							P^{226}Ra
							D^{230}Pa
0·235	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·235	^{185}Ta	50m	^{186}W (γ,p)	28·4			
0·2353	^{200}Pb	21·5h					P^{200}Tl
							D^{200}Bi
							D^{204}Po
0·2359	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·2361	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra(AcX)
							D^{227}Pa
							D^{231}U
0·2362	^{182}Os	13·5h	^{185}Re (p,3n)	37·07			P^{183}Re
0·237	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As (α,2n)	100			
			^{74}Se (α,p)	0·87			
0·238	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		10	
			^{98}Mo (d,α)	23·75			
0·2386	^{212}Pb (ThB)	10·64h					D^{216}Po (ThA)
							P^{212}Bi (ThC)

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0·239	^{131}Ba	11·5d	^{130}Ba (*n*,γ)	0·101	10 ± 1		P^{131}Cs
0·239	^{84m}Rb	23m	^{81}Br (α,*n*)	49·48			
			^{85}Rb (*n*,2*n*)	72·15			
0·2397	^{155}Tb	5·6d					
0·240	^{127}Sb	88h	^{235}U (*n*,*f*)		0·094%		P^{127}Te (84%)
							P^{127m}Te (16%)
							D^{127}Sn
0·240	^{149}Nd	2·0h	^{148}Nd (*n*,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (*d*,*p*)	5·72			
			^{150}Nd (*n*,2*n*)	5·60			
0·240	^{151}Pm	27·5h					D^{151}Nd
0·24	^{184}Ta	8·7h	^{184}W (*n*,*p*)	30·6			
0·2403	^{202m}Pb	3·62h					
0·2404	^{169}Yb	31·8d	^{168}Yb (*n*,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm (*d*,2*n*)	100			
0·2405	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·2411(?)	^{184}Re	50d	^{181}Ta (α,*n*)	99·9877			
			^{182}W (α,*pn*)	26·4			
			^{184}W (*p*,*n*)	30·6			
			^{183}W (*d*,*n*)	14·4			
			^{185}Re (*n*,2*n*)	37·07			
0·2433	^{165}Tm	29h					P^{165}Er
0·2410	^{224}Ra (ThX)	3·64d	^{223}Ra (*n*,γ)	‡	130 ± 20*		D^{228}Th (RdTh)
							P^{220}Rn(Tn)
							D^{224}Ac
0·241	^{88}Zr	17h					P^{88}Y
0·241	^{147}Gd	29h					P^{147}Eu
0·2411	^{202m}Pb	3·62h					
0·2419	^{214}Pb (RaB)	26·8m					D^{218}Po (RaA)
							P^{214}Bi(RaC)
0·242	^{226}Th	30·9m				1·2	D^{230}U
							P^{222}Ra
							D^{226}Ac
0·243	^{111}Ag	7·6d	^{110}Pd (*d*,*n*)	11·8			D^{111}Pd
			^{111}Cd (*n*,*p*)	12·75			D^{111m}Pd
			^{112}Cd (γ,*p*)	24·07			
			^{235}U (*n*,*f*)		0·018%		
0·243	^{125}Xe	18·0h	^{122}Te (α,*n*)	2·46			P^{125}I
			^{124}Xe (*n*,γ)	0·096			D^{125}Cs

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0·244	^{149}Gd	9·3d	$^{147}\text{Sm}\ (\alpha,2n)$	15·07			
			$^{151}\text{Eu}\ (p,3n)$	47·77			
0·244	^{151}Gd	150d	$^{151}\text{Eu}\ (d,2n)$	47·77			
0·2443	^{183}Re	71d	$^{181}\text{Ta}\ (\alpha,2n)$	99·9877			D^{183}Os
			$^{183}\text{W}\ (p,n)$	14·4			
			$^{182}\text{W}\ (d,n)$	26·4			
0·2443	^{183}Ta	5·0d	$^{182}\text{Ta}\ (n,\gamma)$	†	17000 ± 2000*		
			$^{183}\text{W}\ (n,p)$	14·4			
			$^{184}\text{W}\ (\gamma,p)$	30·6			
0·2450	^{189}Ir	11d					D^{189}Pt
							P^{189m}Os
0·245	^{246}Am	25·0m					P^{246}Cm
							D^{246}Pu
0·245	^{240}Np	60m	$^{239}\text{Np}\ (n,\gamma)$	†	25 ± 15*		
0·245	^{77}As	38·7h	$^{76}\text{Ge}\ (d,n)$	7·67		2·5	D^{77}Ge
			$^{235}\text{U}\ (n,f)$		$9{\cdot}1 \times 10^{-3}\%$		D^{77m}Ge
0·2453	^{183}Re	71d	$^{181}\text{Ta}\ (\alpha,2n)$	99·9877			D^{183}Os
			$^{183}\text{W}\ (p,n)$	14·4			
			$^{182}\text{W}\ (d,n)$	26·4			
0·2453	^{152}Eu	12·7y					
0·2460	^{210}At	8·3h	$^{209}\text{Bi}\ (\alpha,3n)$	100			P^{210}Po
							P^{206}Bi
0·246	^{199}Pt	31m	$^{198}\text{Pt}\ (n,\gamma)$	7·19	3·9 ± 0·8		
			$^{198}\text{Pt}\ (d,p)$	7·19			
			$^{202}\text{Hg}\ (n,\alpha)$	29·80			
0·246	^{155}Sm	23·5m	$^{154}\text{Sm}\ (n,\gamma)$	22·53	5·5 ± 1·1		P^{155}Eu
			$^{154}\text{Sm}\ (d,p)$	22·53			
			$^{235}\text{U}\ (n,f)$		0·031%		
0·246	^{108m}In	55m	$^{108}\text{Cd}\ (d,2n)$	0·88			D^{108}Sn
0·246	^{111m}Cd	48·6m	$^{110}\text{Cd}\ (n,\gamma)$	12·39	0·2 ± 0·1		D^{111}In
							(0·1%)
			$^{108}\text{Pd}\ (\alpha,n)$	26·7			
			$^{109}\text{Ag}\ (\alpha,pn)$	48·65			
			$^{112}\text{Cd}\ (n,2n)$	24·07			
0·246	^{39}Cl	55·5m	$^{40}\text{Ar}\ (\gamma,p)$	99·600			
0·246	^{77}Kr	1·1h	$^{74}\text{Se}\ (\alpha,n)$	0·87			
0·2461	^{183}Re	71d	$^{181}\text{Ta}\ (\alpha,2n)$	99·9877			D^{183}Os
			$^{183}\text{W}\ (p,n)$	14·4			
			$^{182}\text{W}\ (d,n)$	26·4			
0·2461	^{183}Ta	5·0d	$^{182}\text{Ta}\ (n,\gamma)$	†	17000 ± 2000*		
			$^{183}\text{W}\ (n,p)$	14·4			
			$^{184}\text{W}\ (\gamma,p)$	30·6			

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0·247	^{111}In	2·81d	^{109}Ag (α,2n)	48·65		~100	P^{111m}Cd (0·01%)
			^{111}Cd (p,n)	12·75			
			^{111}Cd (d,n)	12·75			
0·247	^{234}Np	4·40d	^{235}U (d,3n)	0·720‡			D^{234}Pu
			^{235}U (α,p4n)	0·720‡			
			^{235}U (p,2n)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U (α,p2n)	†			
0·247	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{168}Er (p,n)	27·07			
			^{169}Tm (n,2n)	100			
0·2472	^{199}Tl	7·4h	^{197}Au (α,2n)	100			D^{199}Pb
			^{199}Hg (d,2n)	16·84			
0·2474	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·248	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·248	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*		
			^{153}Eu (d,p)	52·23			
0·2481	^{154}Tb	8h	^{151}Eu (α,n)	47·77			
			^{153}Eu (α,3n)	52·23			
			^{154}Gd (p,n)	2·15			
0·2490	^{204}Bi	11·6h	^{204}Pb (d,2n)	1·40			P^{204m}Pb
			^{203}Tl (α,3n)	29·50			D^{204}Po
0·249	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·249	^{191}Au	3·0h	^{191}Ir (α,4n)	38·5			P^{191}Pt
			^{192}Pt (d,3n)	0·78			D^{191}Hg
0·2496	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn D^{207}At
0·250	^{153}Ho	33m					
0·250	^{153}Tb	62h	^{151}Eu (α,2n)	47·77			P^{153}Gd
0·250	^{245}Bk	4·98d	^{244}Cm (d,n)	†		31	D^{245}Cf
			^{243}Am (α,2n)	†			P^{245}Cm
			^{242}Cm (α,p)	†			
0·250	^{135}Xe	9·13h	^{134}Xe (n,γ)	10·44	0·2 ± 0·1		D^{135}I (~70%)
			^{136}Xe (n,2n)	8·87			D^{135m}Xe
			^{134}Xe (d,p)	10·44			P^{135}Cs
			^{138}Ba (n,α)	71·66			
			^{235}U (n,f)		5·9%		
0·2500	^{177}Lu	6·75d	^{176}Lu (n,γ)	2·60	4000 ± 800		D^{177}Yb
			^{176}Lu (d,p)	2·60			
0·25	^{146}Ce	13·9m				Weak	P^{146}Pr

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0·25	^{184}Re	50d	^{181}Ta (α,n)	99·9877		~0·8	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re (n,2n)	37·07			
0·25	^{208}At	1·6h					D^{212}Fr
							P^{208}Po
0·25	^{90}Mo	5·7h					P^{90}Nb
							P^{90m}Nb
0·25	^{76}Br	17·2h	^{78}Se (p,n)	9·02			D^{76}Kr
			^{75}As (α,3n)	100			
0·25	^{62}Zn	9·33h	^{60}Ni (α,2n)	26·16			P^{62}Cu
			^{64}Zn (γ,2n)	48·89			
			^{63}Cu (p,2n)	69·1			
0·25	^{43}Sc	3·92h	^{43}Ca (p,n)	0·145			
			^{42}Ca (d,n)	0·64			
0·251	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		
0·2513	^{175}Yb	101h	^{174}Yb (n,γ)	31·84	60 ± 40		
			^{176}Yb (γ,n)	12·73			
0·2520	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg (d,2n)	23·13			
0·252	^{151}Tb	19h					
0·2523	^{181}Re	20h					
0·2526	^{191}Hg	57m					P^{191}Au
0·2528	^{184}Re	50d	^{181}Ta (α,n)	99·9877		~0·6	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re (n,2n)	37·07			
0·2529	^{198}Pb	37m					P^{198}Tl
0·2529	^{204}Bi	11·6h	^{204}Pb (d,2n)	1·40			P^{204m}Pb
			^{203}Tl (α,3n)	29·50			D^{204}Po
0·253	^{55}Co	18·2h	^{54}Fe (d,n)	5·84			P^{55}Fe
			^{54}Fe (p,γ)	5·84			
0·253	^{230}Th(Io)	8·0 × 10^4y				$1·7 \times 10^{-2}$	D^{234}U(U$_{II}$)
							P^{226}Ra
							D^{230}Pa
0·253	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·3 ± 0·12		P^{233}Pa
			^{232}Th (d,p)	100‡			
0·253	^{228}Ac	29h					D^{230}Pa
							P^{228}Th
0·253	^{81}Rb	4·7h	^{79}Br (α,2n)	50·52			P^{81m}Kr
							D^{81}Sr

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0·253	^{149}Gd	9·3d	^{147}Sm (α,2n)	15·07			
			^{151}Eu (p,3n)	47·77			
0·2544	^{186}Ir	15h					
0·2546	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U (α,p2n)	99·276‡			P^{239}Pu
							D^{243}Am
0·255	^{230}Pa	17·7d	^{232}Th (d,4n)	100‡			P^{230}U
			^{232}Th (α,p5n)	100‡			P^{230}Th(Io)
			^{230}Th (d,2n)	‡			P^{226}Ac
			^{231}Pa (d,p2n)	‡			
0·255	^{234m}Pa	1·175m	^{233}Pa (n,γ)	†	43 ± 5		D^{234}Th(UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
0·255	^{245}Am	1·98 h					D^{245}Pu
0·255	^{249}Cf	360y				3	D^{249}Bk
0·255	^{137m}Ce	34·5h	^{136}Ce (n,γ)	0·193	0·6 ± 0·2		
			^{139}La (d,4n)	99·911			
			^{139}La (p,3n)	99.911			
0·2556	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5		4·6	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·256	^{116}Sb	5·1h	^{115}In (α,n)	95·77			D^{116m}Sb(?)
			^{117}Sn (d,n)	7·57			
0·2564	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra(AcX)
							D^{227}Pa
							D^{231}U
0·2564	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·2573	^{200}Pb	21·5h					P^{200}Tl
							D^{200}Bi
							D^{204}Po
0·2579	^{193m}Au	3·9s					P^{193m}Pt (0·03%)
							D^{193m}Hg
0·2584	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·2589	^{214}Pb (RaB)	26·8m					D^{218}Po (RaA)
							P^{214}Bi(RaC)
0·259	^{198}Pb	2·4h					

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0·2598	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·2598	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re
0·26	^{226}Ra	1622y				~7×10^{-3}	D^{230}Th(Io)
							P^{222}Rn(Rn)
0·26	^{62}Zn	9·33h	^{60}Ni (α,2*n*)	26·16			P^{62}Cu
			^{64}Zn (γ,2*n*)	48·89			
			^{63}Cu (*p*,2*n*)	69·1			
0·260	^{209}Po	103y	^{209}Bi (*d*,2*n*)	100		~0·4	D^{209}At
0·260	^{115}Cd	53h	^{114}Cd (*n*,γ)	28·86	1·1 ± 0·3		P^{115m}In
			^{114}Cd (*d*,*p*)	28·86			D^{115}Ag (91%)
			^{116}Cd (*n*,2*n*)	7·58			
			^{235}U (*n*,*f*)		0·011%		
0·2605	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·2607	^{198m}Tl	1·91h	^{197}Au (α,3*n*)	100			D (25m) ^{198}Pb
0·2610	^{169}Yb	31·8d	^{168}Yb (*n*,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm (*d*,2*n*)	100			
0·261	^{147}Gd	29h					P^{147}Eu
0·2613	^{79}Kr	34·5h	^{78}Kr (*n*,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,*n*)	9·02			
			^{79}Br (*d*,2*n*)	50·52			
			^{79}Br (*p*,*n*)	50·52			
			^{78}Kr (*d*,*p*)	0·354			
0·2615	^{195m}Au	30·6s					D^{195m}Hg
0·2627	^{156}Tb	5·6d					
0·2628	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·2630	^{105}Cd	55m	^{102}Pd (α,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			
0·263	^{115}Cd	53h	^{114}Cd (*n*,γ)	28·86	1·1 ± 0·3		P^{115m}In
			^{114}Cd (*d*,*p*)	28·86			D^{115}Ag (91%)
			^{116}Cd (*n*,2*n*)	7·58			
			^{235}U (*n*,*f*)		0·011%		
0·263	^{156}Tb	5·6d					

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0·2636	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
0·264	^{75}Ge	82m	^{74}Ge (n,γ)	36·74	0·21 ± 0·08		
			^{74}Ge (d,p)	36·74			
			^{76}Ge ($n,2n$)	7·67			
			^{75}As (n,p)	100			
0·264	^{211}Rn	16h	^{209}Bi ($\alpha,2n$)	100			P^{211}At P^{207}Po
0·264	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		$3{\cdot}7 \times 10^{-3}$%		
0·264	^{93m}Mo	6·95h	^{92}Mo (n,γ)	15·86	< 6mb		
			^{90}Zr (α,n)	51·46			
			^{93}Nb (p,n)	100			
			^{93}Nb ($d,2n$)	100			
0·2641	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·2641	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
0·265	^{136}Cs	12·9d	^{135}Cs (n,γ)		13 ± 4*		
			^{139}La (n,α)	99·911			
0·265	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As ($d,2n$)	100			
			^{75}As (p,n)	100			
0·265	^{93}Y	10·4h					D^{93}Sr
0·265	^{113m}Cd	5·1y	^{112}Cd (d,p)	24·07		~0·1	
0·2655	^{157}Dy	8·2h					
0·266	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd ($n,2n$)	5·60			
0·267	^{117m}Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (d,p)	7·58			D^{117}Ag
0·267	^{76}Kr	9·7h					P^{76}Br
0·267	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·2675	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1	0·86	P^{237}Np
			^{238}U ($n,2n$)	99·276‡			D^{241}Pu
0·268	^{135m}Ba	28·7h	^{136}Ba ($n,2n$)	7·81			

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0·268	^{232}U	74y	^{232}Th (α,4*n*) ^{231}Pa (*d*,*n*) ^{231}Pa (α,*p*2*n*)	100‡ ‡ ‡		4×10^{-3}	D^{232}Pa D^{236}Pu P^{228}Th (RdTh)
0·268	^{200}Pb	21·5h					P^{200}Tl D^{200}Bi D^{204}Po
0·268	^{193}Au	15·8h	^{191}Ir (α,2*n*) ^{192}Pt (*d*,*n*) ^{194}Pt (*d*,3*n*)	38·5 0·78 32·9		4·4	D^{193}Hg D^{193m}Hg P^{193}Pt
0·268	^{81m,79}Br	$3·7 \times 10^{-5}$s					
0·2696	^{223}Ra (AcX)	11·68d				10	D^{227}Th (RdAc) D^{223}Fr (AcK) P^{219}Rn(An) D^{223}Ac
0·270	^{77}As	38·7h	^{76}Ge (*d*,*n*) ^{235}U (*n*,*f*)	7·67	 $9·1 \times 10^{-3}$%		D^{77}Ge D^{77m}Ge
0·270	^{128}Ba	2·4d	^{133}Cs (*d*,7*n*) ^{133}Cs (*p*,6*n*)	100 100			P^{128}Cs
0·270	^{124}I	86s	^{235}U (*n*,*f*)		3·1%		
0·27	^{165}Dy	139·2m	^{164}Dy (*n*,γ)	28·18	2100 ± 300*		
0·27	^{146}Ce	13·9m					P^{146}Pr
0·27	^{84}Br	31·8m	^{87}Rb (*n*,α)	27·85			
0·27	^{247}Bk	~10^4y				30	
0·27	^{241}Am	458y					D^{241}Pu
0·2705	^{172}Lu	6·70d	^{169}Tm (α,*n*) ^{172}Yb (*p*,*n*)	100 21·82			D^{172}Hf
0·271	^{44m}Sc	2·44d	^{41}K (α,*n*) ^{45}Sc (*n*,2*n*) ^{44}Ca (*p*,*n*) ^{43}Ca (*d*,*n*)	6·91 100 2·06 0·145			
0·2714	^{155}Dy	10h					
0·272	^{233}Pa	27·0d	^{232}Pa (*n*,γ) ^{232}Th (*d*,*n*) ^{232}Th (α,*p*2*n*)	† 100‡ 100‡	760 ± 100*		D^{233}Th P^{233}U D^{237}Np
0·272	^{219}Rn (An)	3·92s				8·6	D^{223}Ra (AcX) P^{215}Po (AcA) D^{219}At
0·273	^{173}Lu	1·4y	^{173}Yb (*p*,*n*)	16·13			D^{173}Hf

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0·273	^{149}Gd	9·3d	^{147}Sm (α,2*n*)	15·07			
			^{151}Eu (*p*,3*n*)	47·77			
0·2731	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (α,*p*2*n*)	99·276‡			P^{239}Pu
							D^{243}Am
0·2741	^{191}Hg	57m					P^{191}Au
0·275	^{99}Pd	21·6m					P(4·7h)^{99}Rh
0·275	^{192}Hg	5·7h					P^{192}Au
0·275	^{151}Pm	27·5h					D^{151}Nd
0·276	^{133m}Ba	38·8h	^{133}Cs (*p*,*n*)	100			P^{133}Ba
			^{133}Cs (*d*,2*n*)	100			
			^{134}Ba (γ,*n*)	2·42			
0·2763	^{183}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·277	^{208}Tl (ThC″)	3·10m				~10	D^{212}Bi (ThC)
0·277	^{243}Cm	35y	^{242}Cm (*n*,γ)	†	20 ± 10*		D^{243}Bk
0·277	^{147}Nd	11·06d	^{146}Nd (*n*,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (*d*,*p*)	17·18			
			^{235}U (*n*,*f*)		2·6%		
0·2776	^{239}Am	12h	^{237}Np (α,2*n*)	†			
			^{239}Pu (*p*,*n*)	†			
			^{239}Pu (*d*,2*n*)	†			
			^{239}Pu (α,*p*3*n*)	†			
0·2777	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (α,*p*2*n*)	99·276‡			P^{239}Pu
							D^{243}Am
0·279	^{129}Cs	30·7h	^{127}I (α,2*n*)	100			D^{129}Ba
0·279	^{203}Pb	52·1h	^{203}Tl (*d*,2*n*)	29·50			D^{203}Bi
			^{203}Tl (*p*,*n*)	29·50			
			^{204}Pb (*n*,2*n*)	1·40			
			^{204}Pb (γ,*n*)	1·40			
0·279	^{203}Hg	46·9d	^{202}Hg (*n*,γ)	29·80	3·8 ± 0·8		
			^{202}Hg (*d*,*p*)	29·80			
			^{204}Hg (*n*,2*n*)	6·85			
0·2793	^{197m}Au	7·2s					D^{197m}Hg (3%)
0·2793	^{197m}Hg	24h	^{196}Hg (*n*,γ)	0·146	3100 ± 1000*		P^{197m}Au (3%)
			^{196}Hg (*d*,*p*)	0·146			P^{197}Hg
			^{198}Hg (*n*,2*n*)	10·02			
			^{197}Au (*d*,2*n*)	100			
0·280	^{166}Ho	> 30y					

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0·280	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As ($d,2n$)	100			
			^{75}As (p,n)	100			
0·280	^{61}Cu	3·32h	^{60}Ni (d,n)	26·16		12	D^{61}Zn
			^{61}Ni (p,n)	1·25			
			^{60}Ni (p,γ)	26·16			
			^{63}Cu ($\gamma,2n$)	69·1			
∼0·28	^{172}Hf	∼5y	^{170}Yb ($\alpha,2n$)	3·03			P(6·7d)^{172}Lu
			^{171}Yb ($\alpha,3n$)	14·31			
			^{175}Lu ($p,4n$)	97·40			
0·28	^{188}Pt	10·0d					P^{188}Ir
							D^{188}Au
0·28	^{56}Ni	6·4d	^{54}Fe ($\alpha,2n$)	5·84			P^{56}Co
0·2808	^{105}Ag	40d	^{105}Pd (p,n)	22·2			
			^{105}Pd ($d,2n$)	22·2			
			^{103}Rh ($\alpha,2n$)	100			
0·281	^{117m}Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (d,p)	7·58			D^{117}Ag
0·281	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·281	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		
0·2814	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
0·2818	^{192}Au	4·7h	^{191}Ir ($\alpha,3n$)	38·5			D^{192}Hg
			^{192}Pt ($d,2n$)	0·78			
0·282	^{180}Re	18m					
0·2821	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·2823	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·2824	^{198m}Tl	1·9h	^{197}Au ($\alpha,3n$)	100			D (25m) ^{198}Pb
0·2826	^{175}Yb	101h	^{174}Yb (n,γ)	31·84	60 ± 40		
			^{176}Yb (γ,n)	12·73			
0·2828	^{162}Ho	67m	^{159}Tb (α,n)	100			
			^{162}Dy (p,n)	25·53			
			^{163}Dy ($d,2n$)	25·53			
0·283	^{110}Sn	4·0h					P^{110}In
							P(55m)^{108}In

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0·283	^{228}Pa	22h					D^{226}U P^{224}Ac P^{228}Th (RdTh)
0·2831	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY) P^{227}Ac D^{231}U
0·2833	^{192}Ir	74·37d	^{191}Ir (*n*,*γ*)	38·5	700 ± 200		
			^{191}Ir (*d*,*p*)	38·5			
			^{193}Ir (*n*,2*n*)	61·5			
			^{192}Os (*d*,2*n*)	41·0			
			^{194}Pt (*γ*,*pn*)	32·9			
0·284	^{131}I	8·08d	^{130}Te (*d*,*n*)	34·49		5·3	D^{131}Te
			^{235}U (*n*,*f*)		2·8%		P^{131m}Xe (~1%)
0·284	^{77}Br	57h	^{76}Se (*d*,*n*)	9·02			P^{77m}Se
			^{75}As (*α*,2*n*)	100			
			^{74}Se (*α*,*p*)	0·87			
0·284	^{198}Tl	5·3h					
0·284	^{161}Gd	3·6m	^{160}Gd (*n*,*γ*)	21·9	0·8 ± 0·3		P^{161}Tb
0·2842	^{205}Bi	14·5d					D^{205}Po D^{209}At P^{205}Pb
0.2844(?)	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl D (62m) ^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·2849	^{171}Er	7·8h	^{170}Er (*n*,*γ*)	14·88	9 ± 2		P^{171}Tm
0·285	^{208}Po	2·93y	^{206}Pb (*α*,2*n*)	25·1		~0·003	D^{212}Rn
			^{207}Pb (*α*,3*n*)	21·7			D (1·7h) ^{208}At
			^{209}Bi (*d*,3*n*)	100			D (6·3h) ^{208}At
			^{209}Bi (*p*,2*n*)	100			
0·285	^{149}Pm	54h	^{150}Nd (*p*,2*n*)	5·60			D^{149}Nd
			^{148}Nd (*d*,*n*)	5·72			
			^{149}Sm (*n*,*p*)	13·82			
			^{150}Sm (*γ*,*p*)	7·47			
			^{235}U (*n*,*f*)		1·3%		
0·2856	^{239}Np	2·346d	^{238}U (*d*,*n*)	99·276‡			D^{239}U
			^{238}U (*α*,*p*2*n*)	99·276‡			P^{239}Pu D^{243}Am

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0·286	^{101}Rh	4·7d	^{101}Ru (p,n) ^{100}Ru (d,n)	17·0 12·7			D^{101}Pd
0·2863	^{227}Th (RdAc)	18·17d					D^{227}Ac P^{223}Ra (AcX) D^{227}Pa D^{231}U
0·2865	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi D^{210}Rn D^{206}At
0·2865	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$) ^{182}W (p,n) ^{182}W ($d,2n$)	99·9877 26·4 26·4			
0·287	^{127}Cs	6·3h	^{127}I ($\alpha,4n$)	100			P^{127}Xe P^{127m}Xe (~0·01 %) D^{127}Ba
0·2880	^{207}Po	5·7h	^{206}Pb ($\alpha,3n$)	25·1			D^{211}Rn D^{207}At
0·288	^{151}Tb	19h					
0·288	^{101}Pd	8·5h				15	P (4·7d) ^{101}Rh
0·288	^{212}Bi(ThC)	60·5m					D^{212}Pb(ThB) P^{212}Po (ThC′) P^{208}Tl (ThC′) D^{216}At
0·2893	^{204}Bi	11·6h	^{204}Pb ($d,2n$) ^{203}Tl ($\alpha,3n$)	1·40 29·50			P^{204m}Pb D^{204}Po
0·2893	^{200}Tl	26·1h	^{197}Au (α,n) ^{200}Hg ($d,2n$)	100 23·13			D^{200}Pb
0·2894	^{204m}Pb	66·9m	^{203}Tl (d,n) ^{205}Tl ($d,3n$) ^{204}Pb (n,n)	29·50 70·50 1·40			D^{204}Bi
0·290	^{193}Au	15·8h	^{191}Ir ($\alpha,2n$) ^{192}Pt (d,n) ^{194}Pt ($d,3n$)	38·5 0·78 32·9		0·2	D^{193}Hg D^{193m}Hg P^{193}Pt
0·290	^{198}Pb	2·4h					
0·290	^{200}Pb	21·5h					P^{200}Tl D^{200}Bi D^{204}Po

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0·29	^{189}Au	42m					P^{189}Pt
							D^{189}Hg
0·29	^{75}Br	1·6h	^{74}Se (*p*,γ)	0·87			
			^{74}Se (*d*,*n*)	0·87			
0·29	^{224}Ra (ThX)	3·64d	^{223}Ra (*n*,γ)	‡	130 ± 20*	~8 × 10^{-3}	D^{228}Th (RdTh)
							P^{220}Rn(Tn)
							D^{224}Ac
0·2906	^{193m}Au	3·9s					P^{193m}Pt (0·03 %)
							D^{193m}Hg
0·2913	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
0·2917	^{183}Re	71d	^{181}Ta (α,2*n*)	99·9877			D^{183}Os
			^{183}W (*p*,*n*)	14·4			
			^{182}W (*d*,*n*)	26·4			
0·2917	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·292	^{133}Ba	7·2y	^{132}Ba (*n*,γ)	0·097	7 ± 2		D^{133m}Ba
0·2925	^{105}Cd	55m	^{102}Pd (α,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			
0·2929	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·2930	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
0·293	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$) (0·63 %)
0·294	^{143}Ce	33h	^{142}Ce (*n*,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (*d*,*p*)	11·07			P^{143}Pr
			^{235}U(*n*,*f*)		5·4%		Descendant ^{143}Xe
0·295	^{247}Cf	2·5h					
0·2952	^{214}Pb (RaB)	26·8m					D^{218}Po (RaA)
							P^{214}Bi(RaC)

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0·2957	^{192}Au	4·7h	^{191}Ir (α,3n)	38·5			D^{192}Hg
			^{192}Pt (d,2n)	0·78			
0·2959	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir (n,2n)	61·5			
			^{192}Os (d,2n)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·2960	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·296	^{211}Rn	16h	^{209}Bi (α,2n)	100			P^{211}At P^{207}Po
0·296	^{67}Ga	77·9h	^{66}Zn (d,n)	27·81			D^{67}Ge
			^{67}Zn (p,n)	4·11			
0·2965	^{165}Tm	29h					P^{165}Er
0·2967	^{156}Tb	5·6d					
0·2969	^{186}Ir	15h					D^{186}Pt
0·297	^{210}Tl (RaC″)	1·32m					D^{214}Bi (RaC) P^{210}Pb (RaD)
0·297	^{103}Ru	39·8d	^{102}Ru (n,γ)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (d,p)	31·5			
			^{104}Ru (γ,n)	18·5			
			^{235}U (n,f)		3·7%		
0·297	^{160m}Ho	5·0h					D^{160}Er
0·297	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb (α,2n)	14·31			
			^{172}Yb (α,3n)	21·82			
			^{175}Lu (p,3n)	97·40			
0·2971	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn D^{207}At
0·2978	^{165}Tm	29h					P^{165}Er
0·298	^{103}Pd	17·0d	^{102}Pd (n,γ)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (p,n)	100			D^{103}Ag
			^{103}Rh (d,2n)	100			
0·298	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As (α,2n)	100			
			^{74}Se (α,p)	0·87			
0·298	^{160m}Ho	5·0h					D^{160}Er
0·299	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 22		
			^{160}Gd (d,2n)	21·9			
0·299	^{149}Gd	9·3d	^{147}Sm (α,2n)	15·07			
			^{151}Eu (p,3n)	47·77			

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0·2994	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·2998	^{79}Kr	34·5h	^{78}Kr (*n*,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,*n*)	9·02			
			^{79}Br (*d*,2*n*)	50·52			
			^{79}Br (*p*,*n*)	50·52			
			^{78}Kr (*d*,*p*)	0·354			
0·2999	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·300	^{135}La	19·5h	^{133}Cs (α,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
0·30	^{184}Ta	8·7h	^{184}W (*n*,*p*)	30·6			
0·30	^{186}Ta	10·5m					
0·30	^{227}Ra	41·2m	^{226}Ra (*n*,γ)	‡	20 ± 3*		P^{227}Ac
0·30	^{113m}Ag	1·2m					D^{113}Pd
0·30	^{74}Ga	7·8m				Weak	
0·30	^{138}Pr	2·0h	^{140}Ce (*p*,3*n*)	88·48			
0·30	^{135}Pr	22m					P^{135}Ce
0·3001	^{212}Pb (ThB)	10·64h					D^{216}Po (ThA)
							P^{212}Bi(ThC)
0·3005	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
0·301	^{233}Pa	27·0d	^{232}Pa (*n*,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (*d*,*n*)	100‡			P^{233}U
			^{232}Th (α,*p*2*n*)	100‡			D^{237}Np
0·301	^{100}Rh	20·8h	^{99}Ru (*d*,*n*)	12·7			D^{100}Pd
			^{100}Ru (*d*,2*n*)	12·7			
			^{100}Ru (*p*,*n*)	12·7			
0·302	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·304	^{140}Ba	12·80d	^{139}Ba (*n*,γ)	†	4 ± 1		P^{140}La
			^{235}U (*n*,*f*)		6·17%		Descendant ^{140}Xe
0·304	^{193}Au	15·8h	^{191}Ir (α,2*n*)	38·5			D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt

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0·3048	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra (AcX)
							D^{227}Pa
							D^{231}U
0·3050	^{85m}Kr	4·36h	^{84}Kr (n,γ)	56·90	0·10 ± 0·03		D^{85}Br
			^{84}Kr (d,p)	56·90			
			^{88}Sr (n,α)	82·56			
			^{85}Rb (n,p)	72·15			
0·305	^{159}Ho	33m					
0·305	^{163m}Ho	0·8s					
0·305	^{75}Se	121d	^{74}Se (n,γ)	0·87	26 ± 6		
			^{75}As $(d,2n)$	100			
			^{75}As (p,n)	100			
0·305	^{107}Rh	24m	^{108}Pd (γ,p)	26·7			D^{107}Ru
0·306	^{176}Lu	$2{\cdot}4 \times 10^{10}$y					
0·3069	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br $(d,2n)$	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·307	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb $(\alpha,2n)$	14·31			
			^{172}Yb $(\alpha,3n)$	21·82			
			^{175}Lu $(p,3n)$	97·40			
0·307	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·307	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·3075	^{207}Po	5·7h	^{208}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·3077	^{169}Yb	31·8d	^{168}Yb (n,γ)	0·140	11000 ± 3000*		D^{169}Lu
			^{169}Tm $(d,2n)$	100			
0·3080	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·308	^{129}Sb	4·2h					P^{129}Te
0·308	^{151}Gd	150d	^{151}Eu $(d,2n)$	47·77			
0·3081	^{192}Au	47h	^{191}Ir $(\alpha,3n)$	38·5			D^{192}Hg
			^{192}Pt $(d,2n)$	0·78			

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0·3084	^{171}Er	7·8h	^{170}Er (n,γ)	14·88	9 ± 2		P^{171}Tm
0·3085	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir ($n,2n$)	61·5			
			^{192}Os ($d,2n$)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·3094	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg ($d,2n$)	23·13			
0·310	^{201}Pb	9·4h	^{203}Tl ($d,4n$)	29·50			P^{201}Tl
							D (62m) ^{201}Bi
							D (1·85h) ^{201}Bi
							D^{205}Po
0·310	^{160m}Ho	5·0h					D^{160}Er
0·310	^{147}Gd	29h					P^{147}Eu
0·31	^{231}Th(UY)	25·64h	^{230}Th (n,γ)	‡	35 ± 10*	0·004	D^{235}U(AcU)
							P^{231}Pa
0·31	^{223}Fr (AcK)	22m				0·8	D^{227}Ac
							P^{223}Ra (AcX)
							P^{219}At
0·31	^{48}Cr	23h					P^{48}V
0·31	^{113}Ag	5·3h	^{114}Cd (γ,p)	28·86		Weak	
0·311	^{117m}In	1·90h					Descendant ^{117m}Cd
							D^{117}Cd
							P^{117}In
0·3115	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·312	^{173}Hf	23·6h	^{170}Yb (α,n)	3·03			P^{173}Lu
			^{171}Yb ($\alpha,2n$)	14·31			
			^{172}Yb ($\alpha,3n$)	21·82			
			^{175}Lu ($p,3n$)	97·40			
0·312	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag ($p,3n$)	51·35			
			^{106}Cd ($n,2n$)	1·22			
0·312	^{96}Tc	4·20d	^{96}Mo ($d,2n$)	16·50			
			^{96}Mo (p,n)	16·50			
			^{93}Nb (α,n)	100			
			^{95}Mo (d,n)	15·70			

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0·3128	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra (AcX)
							D^{227}Pa
							D^{231}U
0·3130	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·3130	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·313	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·313	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th (α,p2n)	100‡			D^{237}Np
0·3136	^{206}Bi	6·4d	^{205}Tl (α,3n)	70·50			D^{206}Po
			^{206}Pb (d,2n)	25·1			D^{210}At
			^{207}Pb (d,3n)	21·7			
0·3140	^{187}Ir	13h	^{185}Re (α,2n)	37·07			
			^{188}Os (d,3n)	13·3			
0·3160	^{192}Au	4·7h	^{191}Ir (α,3n)	38·5			D^{192}Hg
			^{192}Pt (d,2n)	0·78			
0·316	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·316	^{76}Kr	9·7h					P^{76}Br
0·3161	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U (α,p2n)	99·276‡			P^{239}Pu
							D^{243}Am
0·3165	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir (n,2n)	61·5			
			^{192}Os (d,2n)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·317	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag (p,3n)	51·35			
			^{106}Cd (n,2n)	1·22			
0·318	^{199}Pt	31m	^{198}Pt (n,γ)	7·19	3·9 ± 0·8		
			^{198}Pt (d,p)	7·19			
			^{202}Hg (n,α)	29·80			
0·318	^{193}Au	15·8h	^{191}Ir (α,2n)	38·5		1·3	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt (d,3n)	32·9			P^{193}Pt
0·318	^{195m}Au	30·6s					D^{195m}Hg

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0·3189	^{175}Hf	70d	^{174}Hf (n,γ)	0·163			
			^{175}Lu $(d,2n)$	97·40			
			^{175}Lu (p,n)	97·40			
0·319	^{129}Cs	30·7h	^{127}I $(\alpha,2n)$	100			D^{129}Ba
0·3194	^{105}Ag	40d	^{105}Pd (p,n)	22·2			
			^{105}Pd $(d,2n)$	22·2			
			^{103}Rh $(\alpha,2n)$	100			
0·320	^{105}Rh	36·5h	^{104}Ru (d,n)	18·5			D^{105m}Rh
			^{106}Pd (γ,p)	27·3			Descendant ^{105}Ru
0·320	^{42}K	12·52h	^{41}K (n,γ)	6·91	1·1 ± 0·1		D^{42}Ar
			^{41}K (d,p)	6·91			
			^{45}Sc (n,α)	100			
0·320	^{51}Cr	27·8d	^{50}Cr (n,γ)	4·31	13·5 ± 1·4	10^{-3}	D^{51}Mn
			^{48}Ti (α,n)	73·99			
			^{51}V (p,n)	99·75			
			^{52}Cr $(n,2n)$	83·76			
			^{50}Cr (d,p)	4·31			
0·320	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·32	^{128}Sb	9·6h					
0·32	^{128}Sb	10·3m					D^{128}Sn
0·32	^{249}Bk	314d					P^{249}Cf
0·32	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·32	^{146}Ce	13·9m					P^{146}Pr
0·321	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·321	^{177}Ta	53h	^{175}Lu $(\alpha,2n)$	97·40			D^{177}W
			^{176}Lu $(\alpha,3n)$	2·60			
			^{177}Hf (p,n)	18·56			
0·321	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·321	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		
0·3214	^{177}Lu	6·75d	^{176}Lu (n,γ)	2·60	4000 ± 800		D^{177}Yb
			^{176}Lu (d,p)	2·60			
0·322	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·3230	^{188}Ir	41·5h	^{187}Re (α,3n)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os (d,2n)	13·3			
			^{189}Os (d,3n)	16·1			
0·323	^{103}Ru	39·8d	^{102}Ru (n,γ)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (d,p)	31·5			
			^{104}Ru (γ,n)	18·5			
			^{235}U (n,f)		3·7%		
0·323	^{51}Ti	5·79m	^{50}Ti (n,γ)	5·25	0·14 ± 0·03		
			^{50}Ti (d,p)	5·25			
			^{51}V (n,p)	99·75			
0·324	^{223}Ra (AcX)	11·68d				2·3	D^{227}Th (RdAc) D^{223}Fr (AcK) P^{219}Rn (An) D^{223}Ac
0·324	^{103}Pd	17·0d	^{102}Pd (n,γ)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (p,n)	100			D^{103}Ag
			^{103}Rh (d,2n)	100			
0·3246	^{172}Lu	6·70d	^{169}Tm (α,n)	100			D^{172}Hf
			^{172}Yb (p,n)	21·82			
0·3246	^{222}Ra	38s				3·6	D^{226}Th P^{218}Rn D^{222}Fr
0·325	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·325	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag (p,3n)	51·35			
			^{106}Cd (n,2n)	1·22			
0·325	^{51}Cr	27·8d	^{50}Cr (n,γ)	4·31	13·5 ± 1·4	~9	D^{51}Mn
			^{48}Ti (α,n)	73·99			
			^{51}V (p,n)	99·75			
			^{52}Cr (n,2n)	83·76			
			^{50}Cr (d,p)	4·31			
0·325	^{222}Ra	38s				8 × 10^{-3}	D^{226}Th P^{218}Rn D^{222}Fr

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0·3251	^{97}Ru	2·88d	^{96}Ru (*n*,γ)	5·57	0·21 ± 0·02		P^{97m}Tc (0·04%)
			^{96}Ru (*d*,*p*)	5·57			P^{97}Tc (99·96%)
			^{98}Ru (*n*,2*n*)	1·91			D^{97}Rh
			^{98}Ru (γ,*n*)	1·91			
			^{94}Mo (α,*n*)	9·12			
0·326	^{178}Ta	2·1h	^{175}Lu (α,*n*)	97·40			P^{178m}Hf
			^{178}Hf (*p*,*n*)	27·1			
0·326	^{178m}Hf	4·8s					D (2·1h) ^{178}Ta
0·326	^{125}Sn	9·5m	^{124}Sn (*n*,γ)	5·98	0·2 ± 0·1	99·7	
			^{124}Sn (*d*,*p*)	5·98			
0·326	^{232}U	74y	^{232}Th (α,4*n*)	100‡		4 × 10^{-8}	D^{232}Pa
			^{231}Pa (*d*,*n*)	‡			D^{236}Pu
			^{231}Pa (α,*p*2*n*)	‡			P^{228}Th (RdTh)
0·3266	^{157}Dy	8·2h					
0·3267	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
0·328	^{140}La	40·22h	^{139}La (*n*,γ)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (*d*,*p*)	99·911			
			^{140}Ce (*n*,*p*)	88·48			
0·328	^{212}Bi(ThC)	60·5m					D^{212}Pb(ThB) P^{212}Po (ThC′) P^{208}Tl(ThC″) D^{216}At
0·3281	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
0·329	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
0·329	^{231}Pa	3·43 × 10^{4}y	^{232}Th (*d*,3*n*)	100‡			D^{231}Th (UY) P^{227}Ac D^{231}U

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0·330	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl D (62m)^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·330	^{108m}In	55m	^{108}Cd (*d*,2*n*)	0·88			D^{108}Sn
0·33	^{76}Br	17·2h	^{76}Se (*p*,*n*)	9·02			D^{76}Kr
			^{75}As (α,3*n*)	100			
0·33	^{184}Re	50d	^{181}Ta (α,*n*)	99·9877		~0·3	
			^{182}W (α,*pn*)	26·4			
			^{184}W (*p*,*n*)	30·6			
			^{183}W (*d*,*n*)	14·4			
			^{185}Re (*n*,2*n*)	37·07			
0·33	^{241}Am	458y					D^{241}Pu
0·33(?)	^{167}Yb	19m					
0·3302	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn D^{207}At
0·3305	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·331	^{196}Au	5·55d	^{195}Pt (*d*,*n*)	33·8			
			^{196}Pt (*p*,*n*)	25·2			
			^{197}Au (*n*,2*n*)	100			
			^{197}Au (γ,*n*)	100			
0·3315	^{105}Ag	40d	^{105}Pd (*p*,*n*)	22·2			
			^{105}Pd (*d*,2*n*)	22·2			
			^{103}Rh (α,2*n*)	100			
0·332	^{180m}Hf	5·5h	^{179}Hf (*n*,γ)	13·75			
0·332	^{178}Ta	2·1h	^{175}Lu (α,*n*)	97·40			P^{178m}Hf
			^{178}Hf (*p*,*n*)	27·1			
0·3323	^{237}U	6·75d	^{236}U (*n*,γ)	†	6 ± 1	1·4	P^{237}Np
			^{238}U (*n*,2*n*)	99·276‡			D^{241}Pu
0·3323	^{181}Re	20h					
0·333	^{211}Rn	16h	^{209}Bi (α,2*n*)	100			P^{211}At P^{207}Po
0·333	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$) D^{234}Pa (UX$_2$) D^{234}Th (UX$_1$) (0·63%)
0·3336	^{199}Tl	7·4h	^{197}Au (α,2*n*)	100			D^{199}Pb
			^{199}Hg (*d*,2*n*)	16·84			

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0·3340	^{133m}Te	63m					P^{133}Te
							Ancestor ^{133}I
							D^{133}Sb
0·3347	^{227}Th (RdAc)	18·17d					D^{227}Ac
							P^{223}Ra (AcX)
							D^{227}Pa
							D^{231}U
0·335	^{109}Sn	18·1m					Ancestor ^{109}In
							P^{109m}In
0·335	^{115m}In	4·50h	^{114}Cd (d,n)	28·86			D^{115}Cd
			^{115}In (n,n)	95·77			
0·335	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
0·335	^{239}Np	2·346d	^{238}U (d,n)	99·276‡			D^{239}U
			^{238}U $(\alpha,p2n)$	99·276‡			P^{239}Pu
							D^{243}Am
0·335	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5			D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·3353	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1	0·2	P^{237}Np
			^{238}U $(n,2n)$	99·276‡			D^{241}Pu
0·336	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·336	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$)
							P^{228}Th (RdTh)
0·336	^{202m}Pb	3·62h					
0·337	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·337	^{197m}Pt	78m	^{198}Pt $(n,2n)$	7·19			
			^{198}Pt (γ,n)	7·19			
			^{196}Pt (d,p)	25·2			
			^{200}Hg (n,α)	23·13			

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0·338	^{223}Ra	11·68d				2·8	D^{227}Th
	(AcX)						(RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·338	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·3390	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
0·340	^{95}Ru	1·65h	^{96}Ru $(n,2n)$	5·57			
			^{92}Mo (α,n)	15·86			
0·340	^{249}Cf	360y				15	D^{249}Bk
0·340	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
0·340	^{111}Ag	7·6d	^{110}Pd (d,n)	11·8			D^{111}Pd
			^{111}Cd (n,p)	12·75			D^{111m}Pd
			^{112}Cd (γ,p)	24·07			
			^{235}U (n,f)		0·018%		
0·340	^{151}Pm	27·5h					D^{151}Nd
0·34	^{99}Rh	4·7h	^{99}Ru (p,n)	12·7		70	D^{99}Pd
			^{98}Ru (d,n)	1·91			
0·34	^{150}Pm	2·7h	^{150}Nd (p,n)	5·60			
			^{150}Nd $(d,2n)$	5·60			
0·341	^{155}Tb	5·6d					
0·341	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·341	^{233}Pa	27·0d	^{232}Pa (n,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (d,n)	100‡			P^{233}U
			^{232}Th $(\alpha,p2n)$	100‡			D^{237}Np
0·3420	^{181}Re	20h					
0·342	^{178,9}Lu	18·7m					
0·343	^{59}Cu	81·5s	^{58}Ni (p,γ)	67·76			
0·343	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·3434	^{175}Hf	70d	^{174}Hf (n,γ)	0·163			
			^{175}Lu $(d,2n)$	97·40			
			^{175}Lu (p,n)	97·40			

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0·344	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu $(n,2n)$	52·23			
0·345	^{152}Eu	12·7y					
0·345	^{105}Ag	40d	^{105}Pd (p,n)	22·2			
			^{106}Pd $(d,2n)$	22·2			
			^{103}Rh $(\alpha,2n)$	100			
0·3452	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn D^{207}At
0·3455	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br $(d,2n)$	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·3459	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·347	^{154}Tb	8h	^{151}Eu (α,n)	47·77			
			^{153}Eu $(\alpha,3n)$	52·23			
			^{154}Gd (p,n)	2·15			
0·347	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·347	^{109}In	4·3h	^{107}Ag $(\alpha,2n)$	51·35			Descendant ^{109}Sn
			^{106}Cd (α,p)	1·22			
			^{106}Cd (d,n)	1·22			
			^{106}Cd (p,γ)	1·22			
0·347	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
0·3473	^{166}Tm	29h					P^{166}Er
0·348	^{147}Gd	29h					P^{147}Eu
0·3494	^{205}Bi	14·5d					D^{205}Po D^{209}At P^{205}Pb
0·350	^{83}Se	70s	^{82}Se (n,γ)	9·19	50 ± 25mb		P^{83}Br
			^{235}U (n,f)		0·21%		
0·350	^{83}Se	25m	^{82}Se (d,p)	9·19			P^{83}Br
0·35	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
0·35	^{87}Zr	94m	^{86}Sr (α,n)	0·56			P^{87m}Y
0·35	^{57}Mn	1·7m				Weak	
0·35	^{180m}W	$5{\cdot}5 \times 10^{-3}$s					
0·35	^{167}Ho	3·0h	^{168}Er (γ,p)	27·07		~18	

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0·3510	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
0·351	^{211}Bi (AcC)	2·16m					D^{211}Pb (AcB)
							P^{211}Po (AcC′)
							P^{207}Tl (AcC″)
							D^{215}At
0·351	^{143}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant ^{143}Xe
0·3520	^{214}Pb (RaB)	26·8m					D^{218}Po (RaA)
							P^{214}Bi (RaC)
0·353	^{199}Pb	90m					P^{199}Tl
							D^{199}Bi
0·353	^{99}Rh	15·0d					
0·3540	^{183}Re	71d	^{181}Ta (α,2n)	99·9877			D^{183}Os
			^{183}W (p,n)	14·4			
			^{182}W (d,n)	26·4			
0·3540	^{183}Ta	5·0d	^{182}Ta (n,γ)	†	17000 ± 2000*		
			^{183}W (n,p)	14·4			
			^{184}W (γ,p)	30·6			
0·354	^{196}Au	5·55d	^{195}Pt (d,n)	33·8			
			^{196}Pt (p,n)	25·2			
			^{197}Au (n,2n)	100			
			^{197}Au (γ,n)	100			
0·355	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi
							D^{210}Rn
							D^{208}At
0·356	^{231}Pa	3·43 × 10^{4}y	^{232}Th (d,3n)	100‡			D^{231}Th (UY)
							P^{227}Ac
							D^{231}U
0·356	^{190}Ir	11d	^{187}Re (α,n)	62·93			
			^{190}Os (d,2n)	26·4			
			^{191}Ir (n,2n)	38·5			
0·3566	^{156}Tb	5·6d					
0·3569	^{165}Tm	29h					P^{165}Er

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0·358	^{173}Hf	23·6h	^{170}Yb (*α*,*n*)	3·03			P^{173}Lu
			^{171}Yb (*α*,2*n*)	14·31			
			^{172}Yb (*α*,3*n*)	21·82			
			^{175}Lu (*p*,3*n*)	97·40			
0·359	^{233}Th	22·12m	^{232}Th (*n*,*γ*)	100‡	7·33 ± 0·12		P^{233}Pa
			^{232}Th (*d*,*p*)	100‡			
0·359	^{190m}Os	9·5m					D (3·2h) ^{190}Ir
0·359	^{73}Se	7·1h	^{70}Ge (*α*,*n*)	20·55			
			^{75}As (*d*,4*n*)	100			
0·360	^{127}Te	9·4h	^{126}Te (*n*,*γ*)	18·71	0·8 ± 0·2	0·1	D^{127m}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb (84%)
			^{128}Te (*n*,2*n*)	31·79			
			^{127}I (*n*,*p*)	100			
0·360	^{133}Ba	7·2y	^{132}Ba (*n*,*γ*)	0·097	7 ± 2		D^{133m}Ba
0·36	^{88}Kr	2·77h	^{87}Kr (*n*,*γ*)	†	< 600		P^{88}Rb D^{88}Br
0·36	^{190}Ir	3·2h	^{187}Re (*α*,*n*)	62·93			P^{190m}Os
			^{189}Os (*d*,*n*)	16·1			
			^{190}Os (*d*,2*n*)	26·4			
0·36	^{165}Dy	139·2m	^{164}Dy (*n*,*γ*)	28·18	2100 ± 300*		
0·36	^{165m}Dy	1·25m	^{164}Dy (*n*,*γ*)	28·18	510 ± 20		
0·3610	^{181}Re	20h					
0·361	^{161}Gd	3·6m	^{160}Gd (*n*,*γ*)	21·9	0·8 ± 0·3		P^{161}Tb
0·361	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl D (62m) ^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·362	^{193}Os	30·6h	^{192}Os (*n*,*γ*)	41·0	1·6 ± 0·4		
0·362	^{103}Pd	17·0d	^{102}Pd (*n*,*γ*)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (*p*,*n*)	100			D^{103}Ag
			^{103}Rh (*d*,2*n*)	100			
0·364	^{159}Gd	18·0h	^{158}Gd (*n*,*γ*)	24·9	4 ± 2		
			^{158}Gd (*d*,*p*)	24·9			
			^{160}Gd (*γ*,*n*)	21·9			
0·364	^{131}I	8·08d	^{130}Te (*d*,*n*)	34·49		80	D^{131}Te
			^{235}U (*n*,*f*)		2·8%		P^{131m}Xe (~1%)
0·365	^{160m}Ho	5·0h					D^{160}Er
0·3655	^{181}Re	20h					

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0·3656	^{183}Re	71d	^{181}Ta (α,2*n*)	99·9877			D^{183}Os
			^{183}W (*p*,*n*)	14·4			
			^{182}W (*d*,*n*)	26·4			
0·3656	^{183}Ta	5·0d	^{182}Ta (*n*,γ)	†	17000 ± 2000*		
			^{183}W (*n*,*p*)	14·4			
			^{184}W (γ,*p*)	30·6			
0·366	^{198}Pb	2·4h					
0·366	^{103}Ru	39·8d	^{102}Ru (*n*,γ)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (*d*,*p*)	31·5			
			^{104}Ru (γ,*n*)	18·5			
			^{235}U (*n*,*f*)		3·7%		
0·367	^{135}La	19·5h	^{133}Cs (α,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
0·367	^{199}Pb	90m					P^{199}Tl
							D^{199}Bi
0·367	^{200}Au	48m	^{199}Au (*n*,γ)	†	30 ± 15*	24	D^{200}Pt
			^{200}Hg (*n*,*p*)	23·13			
			^{203}Tl (*n*,α)	29·5			
0·3680	^{200}Tl	26·1h	^{197}Au (α,*n*)	100			D^{200}Pb
			^{200}Hg (*d*,2*n*)	23·13			
0·3680	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·368	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		3·7 × 10^{-3}%		
0·368	^{199m}Hg	42m	^{199}Hg (*n*,*n*)	16·84			
			^{198}Hg (*d*,*p*)	10·02			
			^{200}Hg (*n*,2*n*)	23·13			
0·368	^{155}Tb	5·6d					
0·368	^{234}Pa	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
	(UX$_2$)						
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$)
							(0·63%)
0·3685	^{237}U	6·75d	^{236}U (*n*,γ)	†	6 ± 1		P^{237}Np
			^{238}U (*n*,2*n*)	99·276‡			D^{241}Pu
0·369	^{43}Sc	3·92h	^{43}Ca (*p*,*n*)	0·145			
			^{42}Ca (*d*,*n*)	0·64			
0·3693	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At

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0·370	^{53}Fe	8·9m	^{50}Cr (α,n)	4·31			
			^{54}Fe (n,2n)	5·84			
			^{54}Fe (γ,n)	5·84			
0·370	^{147}Gd	29h					P^{147}Eu
0·37	^{76}Br	17·2h	^{76}Se (p,n)	9·02			D^{76}Kr
			^{75}As (α,3n)	100			
0·37	^{241}Am	458y					D^{241}Pu
0·37	^{65}Ni	2·564h	^{64}Ni (n,γ)	1·16	1·6 ± 0·2		
			^{64}Ni (d,p)	1·16			
			^{65}Cu (n,p)	30·9			
			^{68}Zn (n,α)	18·56			
0·37	^{127}Xe	36·41d	^{126}Xe (n,γ)	0·090			D^{127}Cs
			^{127}I (p,n)	100			
			^{127}I (d,2n)	100			
			^{124}Te (α,n)	4·61			
0·371	^{129}Cs	30·7h	^{127}I (α,2n)	100			D^{129}Ba
0·371	^{43}K	22·4h	^{40}Ar (α,p)	99·600			
0·371	^{223}Ra (AcX)	11·68d				0·45	D^{227}Th (RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·371	^{237}U	6·75d	^{236}U (n,γ)	†	6 ± 1		P^{237}Np
			^{238}U (n,2n)	99·276‡			D^{241}Pu
0·372	^{99}Mo	66·0h	^{98}Mo (n,γ)	23·75	0·45 ± 0·10		P^{99m}Tc
			^{96}Zr (α,n)	2·80			
			^{98}Mo (d,p)	23·75			
			^{100}Mo (n,2n)	9·62			
			^{100}Mo (γ,n)	9·62			
			^{235}U (n,f)		6·2%		
0·372	^{90}Nb	14·60h	^{90}Zr (d,2n)	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
0·372	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru (d,2n)	12·7			
			^{100}Ru (p,n)	12·7			
0·373	^{172}Lu	6·70d	^{169}Tm (α,n)	100			D^{172}Hf
			^{172}Yb (p,n)	21·82			
0·374	^{147}Gd	29h					P^{147}Eu
0·374	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·3747	^{204m}Pb	66·9m	^{203}Tl (d,n)	29·50			D^{204}Bi
			^{205}Tl (d,3n)	70·50			
			^{204}Pb (n,n)	1·40			

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0·3747	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·3747	^{192}Ir	74·37d	^{191}Ir (*n*,γ)	38·5	700 ± 200		
			^{191}Ir (*d*,*p*)	38·5			
			^{193}Ir (*n*,2*n*)	61·5			
			^{192}Os (*d*,2*n*)	41·0			
			^{194}Pt (γ,*pn*)	32·9			
0·376	^{233}Pa	27·0d	^{232}Pa (*n*,γ)	†	760 ± 100*		D^{233}Th
			^{232}Th (*d*,*n*)	100‡			P^{233}U
			^{232}Th (α,*p*2*n*)	100‡			D^{237}Np
0·378	^{193}Au	15·8h	^{191}Ir (α,2*n*)	38·5		1·4	D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·380	^{245}Bk	4·98d	^{244}Cm (*d*,*n*)	†		5·1	D^{245}Cf
			^{243}Am (α,2*n*)	†			P^{245}Cm
			^{242}Cm (α,*p*)	†			
0·38	^{61}Cu	3·32h	^{80}Ni (*d*,*n*)	26·16		2·5	D^{61}Zn
			^{61}Ni (*p*,*n*)	1·25			
			^{60}Ni (*p*,γ)	26·16			
			^{63}Cu (γ,2*n*)	69·1			
0·38	^{125}Sb	2·0y	^{124}Sn (*d*,*n*)	5·98			D (9·4d) ^{125}Sn
			^{235}U (*n*,*f*)		0·023%		P^{125m}Te
0·38	^{71m}Zn	3h					
0·381	^{243}Pu	4·98h	^{242}Pu (*n*,γ)	†	19 ± 1	0·7	P^{243}Am
0·381	^{87m}Y	14h	^{86}Sr (*d*,*n*)	9·86			D^{87}Zr
			^{87}Sr (*d*,2*n*)	7·02			P^{87}Y
			^{87}Sr (*p*,*n*)	7·02			
0·3814	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·3818	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re
0·382(?)	^{198}Pb	2·4h					
0·382	^{126}I	13·3d	^{123}Sb (α,*n*)	42·75			
			^{125}Te (*d*,*n*)	6·99			
			^{126}Te (*p*,*n*)	18·71			
			^{127}I (*n*,2*n*)	100			
			^{127}I (γ,*n*)	100			
0·383	^{195m}Tl	3·5s					D^{195}Pb
0·383	^{195}Pb	17m					P^{195m}Tl
0·3832	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb

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0·385	^{253}E	20·03d				0·03	D^{253}Cf
							D^{253}Fm
0·385	^{126}Cs	1·6m				38	D^{126}Ba
0·385	^{197m}Pb	42m					
0·385	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·385	^{197m}Tl	0·54s					
0·385	^{107}Rh	24m	^{108}Pd (γ,p)	26·7			D^{107}Ru
0·386	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·387	^{197m}Tl	0·54s					
0·387	^{197m}Pb	42m					
0·388	^{69}Ge	40·4h	^{69}Ga $(d,2n)$	60·2			D^{69}As
			^{69}Ga (p,n)	60·2			
			^{66}Zn (α,n)	27·81			
0·388	^{67}Ga	77·9h	^{66}Zn (d,n)	27·81			D^{67}Ge
			^{67}Zn (p,n)	4·11			
0·388	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		
0·388	^{43}K	22·4h	^{40}Ar (α,p)	99·600			
0·388	^{136}I	86s	^{235}U (n,f)		3·1%		
0·389	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·389	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·3892	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br $(d,2n)$	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·390	^{93m}Tc	43·5m	^{92}Mo (d,n)	15·86			
0·390	^{202m}Pb	3·62h					
0·39	^{113m}Ag	1·2m					D^{113}Pd
0·39	^{195}Hg	9·5h	^{197}Au $(p,3n)$	100			D^{195m}Hg
							D^{195}Tl
0·391	^{147}Gd	29h					P^{147}Eu
0·392	^{113m}In	104m	^{113}Cd (p,n)	12·26			D^{113}Sn
			^{112}Cd (d,n)	24·07			
			^{113}In (n,n)	4·23			
0·392	^{113}Sn	119d	^{112}Sn (n,γ)	0·95	1·3 ± 0·3		P^{113m}In
			^{112}Sn (d,p)	0·95			
			^{113}In (p,n)	4·23			
			^{113}In $(d,2n)$	4·23			

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0·392(?)	^{52m}Mn	21·3m	^{52}Cr (*d*,2*n*)	83·76		0·05(?)	D^{52}Fe
			^{52}Cr (*p*,*n*)	83·76			
			^{54}Fe (*γ*,*pn*)	5·84			
			^{54}Fe (*d*,*α*)	5·84			
0·392	^{190}Re	2·8m					
0·393	^{160m}Ho	5·0h					D^{160}Er
0·393	^{195m}Tl	3·5s					D^{195}Pb
0·393	^{105}Ag	40d	^{105}Pd (*p*,*n*)	22·2			
			^{105}Pd (*d*,2*n*)	22·2			
			^{103}Rh (*α*,2*n*)	100			
0·393	^{195}Pb	17m					P^{195m}Tl
0·394	^{43}K	22·4h	^{40}Ar (*α*,*p*)	99·600			
0·394	^{249}Cf	360y				72	D^{249}Bk
0·394	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl
							D (62m) ^{201}Bi
							D (1·85h) ^{201}Bi
							D^{205}Po
0·394	^{88}Zr	85d					P^{88}Y
0·396	^{147}Gd	29h					P^{147}Eu
0·3961	^{175}Yb	101h	^{174}Yb (*n*,*γ*)	31·84	60 ± 40		
			^{176}Yb (*γ*,*n*)	12·73			
0·3977	^{79}Kr	34·5h	^{78}Kr (*n*,*γ*)	0·354	2·0 ± 0·5		
			^{76}Se (*α*,*n*)	9·02			
			^{79}Br (*d*,2*n*)	50·52			
			^{79}Br (*p*,*n*)	50·52			
			^{78}Kr (*d*,*p*)	0·354			
0·398	^{198}Pb	2·4h					
0·398	^{204}Bi	6·4d	^{205}Tl (*α*,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·400	^{233}Pa	27·0d	^{232}Pa (*n*,*γ*)	†	760 ± 100*		D^{233}Th
			^{232}Th (*d*,*n*)	100‡			P^{233}U
			^{232}Th (*α*,*p*2*n*)	100‡			D^{237}Np
0·400	^{147}Nd	11·06d	^{146}Nd (*n*,*γ*)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (*d*,*p*)	17·18			
			^{235}U (*n*,*f*)		2·6%		
0·40	^{76}Kr	9·7h					P^{76}Br
0·40	^{28}Mg	21·2h	^{30}Si (*γ*,2*p*)				P^{28}Al
0·40	^{62}Zn	9·33h	^{60}Ni (*α*,2*n*)	26·16			P^{62}Cu
			^{64}Zn (*γ*,2*n*)	48·89			
			^{63}Cu (*p*,2*n*)	69·1			

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0·40	^{57}Ni	36h	^{54}Fe (α,*n*)	5·84		0·5	P^{57}Co
			^{58}Ni (*n*,2*n*)	67·76			
			^{58}Ni (γ,*n*)	67·76			
0·40	^{25}Na	60s	^{25}Mg (*n*,*p*)	10·11			
			^{26}Mg (γ,*p*)	11·29			
~0·40	^{82}Sr	25·5d					D^{82}Y
							P^{82}Rb
0·40	^{150}Pm	2·7h	^{150}Nd (*p*,*n*)	5·60			
			^{150}Nd (*d*,2*n*)	5·60			
0·40	^{172}Tm	63·6h				Weak	D^{172}Er
~0·40	^{188}Pt	10·0d					P^{188}Ir
							D^{188}Au
~0·4	^{126}Sb	9h					D^{126}Sn
0·4	^{119}In	17·5m	^{120}Sm (γ,*p*)	32·97			D (10m) ^{119}Cd
							D (2·9m) ^{119}Cd
0·4	^{180m}Ta	8·15h	^{181}Ta (*n*,2*n*)	99·9877		Very weak	
			^{181}Ta (γ,*n*)	99·9877			
			^{182}W (γ,*pn*)	26·4			
~0·4	^{149}Eu	120d	^{149}Sm (*p*,*n*)	13·82			
0·401	^{192}Au	4·7h	^{191}Ir (α,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
0·401	^{187}Ir	13h	^{185}Re (α,2*n*)	37·07			
			^{188}Os (*d*,3*n*)	13·3			
0·401	^{190}Ir	11d	^{187}Re (α,*n*)	62·93			
			^{190}Os (*d*,2*n*)	26·4			
			^{191}Ir (*n*,2*n*)	38·5			
0·401	^{219}Rn (An)	3·92s				4·8	D^{223}Ra (AcX)
							P^{215}Po (AcA)
							D^{219}At
0·401	^{203}Pb	52·1h	^{203}Tl (*d*,2*n*)	29·50			D^{203}Bi
			^{203}Tl (*p*,*n*)	29·50			
			^{204}Pb (*n*,2*n*)	1·40			
			^{204}Pb (γ,*n*)	1·40			
0·402	^{198}Tl	5·3h					
0·402	^{75}Se	121d	^{74}Se (*n*,γ)	0·87	26 ± 6		
			^{75}As (*d*,2*n*)	100			
			^{75}As (*p*,*n*)	100			
0·4024	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At

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0·403	^{87}Kr	78m	^{86}Kr (n,γ) ^{86}Kr (d,p) ^{87}Rb (n,p)	17·37 17·37 27·85	60 ± 20mb		D^{87}Br
0·404	^{210}At	8·3h	^{209}Bi $(\alpha,3n)$	100			P^{210}Po P^{206}Bi
0·404	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA) P^{211}Bi(AcC)
0·405	^{191}Au	3·0h	^{191}Ir $(\alpha,4n)$ ^{192}Pt $(d,3n)$	38·5 0·78			P^{191}Pt D^{191}Hg
0·405	^{204}Bi	11·6h	^{204}Pb $(d,2n)$ ^{203}Tl $(\alpha,3n)$	1·40 29·50			P^{204m}Pb D^{204}Po
0·4057	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn D^{207}At
0·406	^{116m}In	53·99m	^{115}In (n,γ) ^{115}In (d,p) ^{116}Cd (p,n)	95·77 95·77 7·58	155 ± 10	25	
0·406	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl D (62m) ^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·4066	^{183}Re	71d	^{181}Ta $(\alpha,2n)$ ^{183}W (p,n) ^{182}W (d,n)	99·9877 14·4 26·4			D^{183}Os
0·4066	^{183}Ta	5·0d	^{182}Ta (n,γ) ^{183}W (n,p) ^{184}W (γ,p)	† 14·4 30·6	17000 ± 2000*		
0·407	^{160m}Ho	5·0h					D^{160}Er
0·408	^{106}Ag	8·2d	^{103}Rh (α,n) ^{105}Pd (d,n) ^{106}Pd (p,n) ^{107}Ag $(n,2n)$	100 22·2 27·3 51·35			
0·409	^{130}I	12·6h	^{129}I (n,γ) ^{130}Te $(d,2n)$ ^{130}Te (p,n) ^{133}Cs (n,α)	† 34·49 34·49 100	11 ± 4		
0·410	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·41	^{101}Tc	14·0m	^{100}Mo (d,n) ^{102}Ru (γ,p)	9·62 31·5			D^{101}Mo

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0·41	^{224}Ra (ThX)	3·64d	^{223}Ra (*n*,γ)	‡	130 ± 20*	~4 × 10⁻³	D^{228}Th (RdTh) P^{220}Rn(Tn) D^{221}Ac
0·41	^{116}Sb	60m	^{115}In (α,3*n*)	95·77			
0·41	^{186}Ta	10·5m					
0·41	^{184}Ta	8·7h	^{184}W (*n*,*p*)	30·6			
0·411	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
0·411	^{138}Cs	32·2m	^{138}Ba (*n*,*p*)	71·66		3	D^{138}Xe
			^{137}Cs (*n*,γ)	†	< 2		Descendant ^{138}I
0·411	^{129}Cs	30·7h	^{127}I (α,2*n*)	100			D^{129}Ba
0·411	^{127}Cs	6·3h	^{127}I (α,4*n*)	100			P^{127}Xe P^{127m}Xe (~0·01 %) D^{127}Ba
0·411	^{198}Tl	5·3h					
0·4118	^{198}Au	2·697d	^{197}Au (*n*,γ)	100	96 ± 10		
			^{197}Au (*d*,*p*)	100			
			^{198}Hg (*n*,*p*)	10·02			
			^{198}Pt (*p*,*n*)	10·02			
0·412	^{152}Eu	12·7y					
0·412	^{109}Pd	13·5h	^{108}Pd (*n*,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (*d*,*p*)	26·7			P^{109m}Ag
			^{110}Pd (γ,*p*)	11·8			
			^{109}Ag (*n*,*p*)	48·65			
			^{235}U (*n*,*f*)		0·028 %		
0·4122	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·4152	^{212}Pb (ThB)	10·64h					D^{216}Po (ThA) P^{212}Bi (ThC)
0·416	^{192}Au	4·7h	^{191}Ir (α,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
0·4166	^{192}Ir	74·37d	^{191}Ir (*n*,γ)	38·5	700 ± 200		
			^{191}Ir (*d*,*p*)	38·5			
			^{193}Ir (*n*,2*n*)	61·5			
			^{192}Os (*d*,2*n*)	41·0			
			^{194}Pt (γ,*pn*)	32·9			

* Pile Neutrons † Artificially Active ‡ Naturally Active

γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·417	^{247}Cf	2·5h					
0·417	^{233}Pa	27·0d	^{232}Pa (*n*,*γ*)	†	760 ± 100*		D^{233}Th
			^{232}Th (*d*,*n*)	100‡			P^{233}U
			^{232}Th (*α*,*p*2*n*)	100‡			D^{237}Np
0·418	^{77}Ge	11·3h	^{76}Ge (*n*,*γ*)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,*α*)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}7 \times 10^{-3}$%		
0·418	^{127}Te	9·4h	^{126}Te (*n*,*γ*)	18·71	0·8 ± 0·2	0·8	D^{127m}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb (84%)
			^{128}Te (*n*,2*n*)	31·79			
			^{127}I (*n*,*p*)	100			
0·420	^{99}Pd	21·6m					P (4·7h) ^{99}Rh
0·42	^{127}Sb	88h	^{235}U (*n*,*f*)		0·094%		P^{127}Te (84%) P^{127m}Te (16%) D^{127}Sn
0·42	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,*α*)	15·86			
			^{92}Mo (*γ*,*pn*)	15·86			
0·42	^{76}Br	17·2h	^{76}Se (*p*,*n*)	9·02			D^{76}Kr
			^{75}As (*α*,3*n*)	100			
0·42	^{226}Ra	1622y				$\sim 2 \times 10^{-4}$	D^{230}Th (Io) P^{222}Rn(Rn)
0·42(?)	^{59}Cu	81·5s	^{58}Ni (*p*,*γ*)	67·76			
0·42	^{138}Xe	17m					P^{138}Cs
0·42	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	6·9	P^{135m}Xe (30%) P^{135}Xe (70%) D^{135}Te
0·42	^{128}Sb	19m					
0·42	^{202m,204m}Tl	$6{\cdot}2 \times 10^{-6}$s					
0·42	^{166}Ho	> 30y					
0·42	^{196}Ir	2·3h	^{196}Pt (*γ*,*p*)	25·2			D^{196}Os
			^{196}Pt (*n*,*p*)	33·8			
0·421	^{151}Nd	15m					P^{151}Pm
0·4215	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (*α*,3*n*)	29·50			D^{204}Po

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0·422	^{202m}Pb	3·62h					
0·422	^{203}Bi	95m					D^{203}Po
0·4222	^{156}Tb	5·6d					
0·423	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·424	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd ($n,2n$)	5·60			
0·424	^{199m}Pb	12·2m					
0·425	^{192}Au	15·8h	^{191}Ir ($\alpha,2n$)	38·5		0·25	D^{192}Hg
			^{192}Pt (d,n)	0·78			D^{192m}Hg
			^{194}Pt ($d,3n$)	32·9			P^{192}Pt
0·425	^{177}Ta	53h	^{175}Lu ($\alpha,2n$)	97·40			
			^{176}Lu ($\alpha,3n$)	2·60			
			^{177}Hf (p,n)	18·56			
0·425	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·425	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA) P^{211}Bi(AcC)
0·426	^{198}Au	5·55d	^{195}Pt (d,n)	33·8			
			^{196}Pt (p,n)	25·2			
			^{197}Au ($n,2n$)	100			
			^{197}Au (γ,n)	100			
0·426	^{196}Tl	1·8h					D^{196}Pb
0·427	^{187}Ir	13h	^{185}Re ($\alpha,2n$)	37·07			
			^{188}Os ($d,3n$)	13·3			
0·427	^{178}Ta	2·1h	^{175}Lu (α,n)	97·40			P^{178m}Hf
			^{178}Hf (p,n)	27·1			
0·427	^{178m}Hf	4·8s					D (2·1h) ^{178}Ta
0·427	^{109}In	4·3h	^{107}Ag ($\alpha,2n$)	51·35			Descendant ^{109}Sn
			^{106}Cd (α,p)	1·22			
			^{106}Cd (d,n)	1·22			
			^{108}Cd (p,γ)	1·22			
0·427	^{75}Ge	82m	^{74}Ge (n,γ)	36·74	0·21 ± 0·08		
			^{74}Ge (d,p)	36·74			
			^{76}Ge ($n,2n$)	7·67			
			^{75}As (n,p)	100			
0·427	^{253}E	20·03d				0·005	D^{253}Cf D^{253}Fm

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0·43	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
0·43	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P$^{125\text{m}}$Te
0·43	$^{117\text{m}}$Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor $^{117\text{m}}$In
			^{116}Cd (d,p)	7·58			D^{117}Ag
0·43	^{108}Ag	2·3m	^{107}Ag (n,γ)	51·35	45 ± 4		
			^{107}Ag (d,p)	51·35			
			^{108}Cd (n,p)	0·88			
0·43	^{169}Er	75m					
0·432	^{212}Bi (ThC)	60·5m					D^{212}Pb (ThB)
							P^{212}Po (ThC′)
							P^{208}Tl (ThC″)
							D^{216}At
0·4330	^{175}Hf	70d	^{174}Hf (n,γ)	0·163			
			^{175}Lu ($d,2n$)	97·40			
			^{175}Lu (p,n)	97·40			
0·433	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag ($p,3n$)	51·35			
			^{106}Cd ($n,2n$)	1·22			
0·4348	^{184}Ir	15h					D^{186}Pt
0·435	^{106}Rh	130m					
0·436	^{192}Au	4·7h	^{191}Ir ($\alpha,3n$)	38·5			D^{192}Hg
			^{192}Pt ($d,2n$)	0·78			
0·436	^{23}Ne	40·2s	^{22}Ne (n,γ)	8·82	36 ± 15mb		
			^{23}Na (n,p)	100			
			^{26}Mg (n,α)	11·29			
0·437	^{213}Bi	47m					D^{217}At
							P^{213}Po
							P^{209}Tl
0·438	^{140}La	40·22h	^{139}La (n,γ)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (d,p)	99·911			
			^{140}Ce (n,p)	88·48			
0·438	$^{110\text{m}}$Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd ($d,2n$)	11·8			
0·438	$^{69\text{m}}$Zn	13·8h	^{68}Zn (n,γ)	18·56	97 ± 10mb		P^{69}Zn
			^{68}Zn (d,p)	18·56			
			^{71}Ga (d,α)	39·8			

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0·4385	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·4391	^{202}Tl	12·0h	^{202}Hg $(d,2n)$	29·80			D^{202}Pb
			^{203}Tl $(n,2n)$	29·50			
0·440	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5		3·1	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·44	^{92}Sr	2·60h	^{235}U (n,f)		5·0%		P^{92}Y
0·44	^{240}Np	60m	^{239}Np (n,γ)	†	25 ± 15*		
0·44	^{128}Cs	3·8m					D^{128}Ba
0·44	^{144}Pm	300d					
0·44	^{84}Br	6·0m				60	
0·441	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·441	^{223}Ra (AcX)	11·68d					D^{227}Th (RdAc)
							D^{223}Fr (AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·4419	^{181}Re	20h					
0·442(?)	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·442	^{100}Rh	20·8h	^{99}Ru $(d.n)$	12·7			D^{100}Pd
			^{100}Ru $(d,2n)$	12·7			
			^{100}Ru (p,n)	12·7			
0·443	^{180m}Hf	5·5h	^{179}Hf (n,γ)	13·75		80	
0·443	^{105}Ag	40d	^{105}Pd (p,n)	22·2			
			^{105}Pd $(d,2n)$	22·2			
			^{103}Rh $(\alpha,2n)$	100			
0·445	^{152}Eu	12·7y					
0·445	^{211}Rn	16h	^{209}Bi $(\alpha,2n)$	100			P^{211}At
							P^{207}Po
0·445	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·445	^{230}Pa	17·7d	^{232}Th $(d,4n)$	100‡			P^{230}U
			^{232}Th $(\alpha,p5n)$	100‡			P^{230}Th(Io)
			^{230}Th $(d,2n)$	‡			P^{226}Ac
			^{231}Pa $(d,p2n)$	‡			

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0·446	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·446	^{223}Ra (AcX)	11·68d					D^{227}Th (RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·448	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{168}Er (p,n)	27·07			
			^{169}Tm $(n,2n)$	100			
0·448	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·449	^{234}Np	4·40d	^{235}U $(d,3n)$	0·720‡			D^{234}Pu
			^{235}U $(\alpha,p4n)$	0·720‡			
			^{235}U $(p,2n)$	0·720‡			
			^{233}U (d,n)	†			
			^{233}U $(\alpha,p2n)$	†			
0·450	^{81}Rb	4·7h	^{79}Br $(\alpha,2n)$	50·52			P^{81m}Kr
							D^{81}Sr
0·45_	^{131}Te	24·8m	^{130}Te (n,γ)	34·49	0·22 ± 0·05		P^{131}I
			^{130}Te (d,p)	34·49			D^{131m}Te
							D^{131}Sb
0·45	^{209}Tl	2·2m					D^{213}Bi
							P^{209}Pb
0·451	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		27	
			^{98}Mo (d,α)	23·75			
0·452	^{212}Bi (ThC)	60·5m					D^{212}Pb (ThB)
							P^{212}Po (ThC′)
							P^{208}Tl (ThC″)
							D^{216}At
0·453	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12	1	P^{233}Pa
			^{232}Th (d,p)	100‡			
0·454	^{188}Re	16·7h	^{167}Re (n,γ)	62·93	75 ± 15	0·04	D^{188}W
			^{187}Re (d,p)	62·93			
0·455	^{199}Tl	7·4h	^{197}Au $(\alpha,2n)$	100			D^{199}Pb
			^{199}Hg $(d,2n)$	16·84			

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0·455	^{137}Ce	8·7h	^{136}Ce (n,γ)	0·193	6·3 ± 1·5	3	D^{137}Pr
			^{139}La $(d,4n)$	99·911			
			^{139}La $(p,3n)$	99·911			
0·455	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·455	^{93}Y	10·4h					D^{93}Sr
0·456	^{127}Sb	88h	^{235}U (n,f)		0·094%		P^{127}Te(84%) P^{127m}Te (16%) D^{127}Sn
0·458	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·460	^{202m}Pb	3·62h					
0·460	^{247}Cf	2·5h					
0·460	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		
0·46	^{128}I	24·99m	^{127}I (n,γ)	100	5·6 ± 0·3	17	
			^{128}Te $(d,2n)$	31·79			
			^{128}Te (p,n)	31·79			
0·46	^{59}Cu	81·5s	^{58}Ni (p,γ)	67·76			
0·46	^{125}Xe	18·0h	^{122}Te (α,n)	2·46			P^{125}I
			^{124}Xe (n,γ)	0·096			D^{125}Cs
0·46	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·46	^{146}Pr	24·4m					D^{146}Ce
0·461	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·463	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi D^{210}Rn D^{206}At
0·463	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		23	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
0·463	^{84m}Rb	23m	^{81}Br (α,n)	49·48			
			^{85}Rb $(n,2n)$	72·15			
0·464	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·466	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)

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0·467	^{192}Au	4·7h	^{191}Ir $(\alpha,3n)$	38·5			D^{192}Hg
			^{192}Pt $(d,2n)$	0·78			
0·4680	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir $(n,2n)$	61·5			
			^{192}Os $(d,2n)$	41·0			
			^{194}Pt (γ,pn)	32·9			
0·469	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·470	^{181}Re	20h					
0·470	^{195m}Hg	40·0h	^{197}Au $(d,4n)$	100			P^{195}Hg
			^{197}Au $(p,3n)$	100			P^{195m}Au
0·47	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
~0·47	^{241}Cm	35d	^{239}Pu $(\alpha,3n)$	†			P^{237m}Pu
			^{241}Am (p,n)	†			
0·47	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
0·47	^{102}Tc	4·5m					
0·471	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·472	^{212}Bi(ThC)	60·5m					D^{212}Pb(ThB)
							P^{212}Po (ThC′)
							P^{208}Tl (ThC″)
							D^{216}At
0·472	^{24m}Na	~0·02s					D^{24}Ne
0·472	^{24}Ne	3·38m					P^{24m}Na
							P^{24}Na
0·473	^{134}Cs	2·07y	^{133}Cs (n,γ)	100	30 ± 1		
			^{133}Cs (d,p)	100			
			^{134}Xe $(d,2n)$	10·44			
			^{134}Xe (p,n)	10·44			
0·4734	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·474	^{102}Rh	210d	^{101}Ru (d,n)	17·0			
			^{103}Rh $(n,2n)$	100			
			^{103}Rh (γ,n)	100			
0·475	^{199}Pt	31m	^{198}Pt (n,γ)	7·19	3·9 ± 0·8		
			^{198}Pt (d,p)	7·19			
			^{202}Hg (n,α)	29·80			

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0·475	^{129m}Te	33·5d	^{128}Te (*n*,*γ*)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (*d*,*p*)	31·79			
			^{130}Te (*n*,2*n*)	34·49			
			^{235}U (*n*,*f*)		0·19%		
0·475	^{129}Te	72m	^{128}Te (*n*,*γ*)	31·79	0·13 ± 0·03		D^{129m}Te
			^{128}Te (*d*,*p*)	31·79			D^{129}Sb
			^{130}Te (*n*,2*n*)	34·49			
			^{130}Te (*γ*,*n*)	34·49			
0·4760	^{181}Hf	44·6d	^{180}Hf (*n*,*γ*)	35·22	10 ± 3		
			^{181}Ta (*n*,*p*)	99·9877			
0·476(?)	^{233}Pa	27·0d	^{232}Pa (*n*,*γ*)	†	760 ± 100*		D^{233}Th
			^{232}Th (*d*,*n*)	100‡			P^{233}U
			^{232}Th (*α*,*p*2*n*)	100‡			D^{237}Np
0·477	^{193}Au	15·8h	^{191}Ir (*α*,2*n*)	38·5		0·5	D^{193}Hg
			^{192}Pt (*d*,*n*)	0·78			D^{193m}Hg
			^{194}Pt (*d*,3*n*)	32·9			P^{193}Pt
0·477	^{75}Ge	82m	^{74}Ge (*n*,*γ*)	36·74	0·21 ± 0·08		
			^{74}Ge (*d*,*p*)	36·74			
			^{76}Ge (*n*,2*n*)	7·67			
			^{75}As (*n*,*p*)	100			
0·477	^{55}Co	18·2h	^{54}Fe (*d*,*n*)	5·84			P^{55}Fe
			^{54}Fe (*p*,*γ*)	5·84			
0·4772	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re
0·4773	^{7}Be	53·61d	^{6}Li (*d*,*n*)	7·42			
			^{7}Li (*p*,*n*)	92·71			
0·478	^{188}Re	16·7h	^{187}Re (*n*,*γ*)	62·93	75 ± 15	0·6	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
0·479	^{188}Ir	41·5h	^{187}Re (*α*,3*n*)	62·93			D^{188}Pt
			^{185}Re (*α*,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*d*,3*n*)	16·1			
0·4795	^{187}W	24·0h	^{186}W (*n*,*γ*)	28·4	34 ± 7		
			^{186}W (*d*,*p*)	28·4			
0·48	^{128}I	13·3d	^{123}Sb (*α*,*n*)	42·75			
			^{125}Te (*d*,*n*)	6·99			
			^{126}Te (*p*,*n*)	18·71			
			^{127}I (*n*,2*n*)	100			
			^{127}I (*γ*,*n*)	100			
0·48	^{92}Y	3·60h	^{92}Zr (*n*,*p*)	17·11			D^{92}Sr
			^{94}Zr (*d*,*α*)	17·40			
0·48	^{222}Ra	38s				7×10^{-3}	D^{226}Th
							P^{218}Rn
							D^{222}Fr

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0·48	^{58}Ni	6·4d	^{54}Fe $(\alpha,2n)$	5·84			P^{58}Co
0·48	^{47}Ca	4·7d	^{46}Ca (d,p)	0·0033		~5	P^{47}Sc
0·481	^{135}La	19·5h	^{133}Cs $(\alpha,2n)$	100			D^{135}Ce
			^{134}Ba (d,n)	2·42			
			^{135}Ba (p,n)	6·59			
0·4820	^{181}Hf	44·6d	^{180}Hf (n,γ)	35·22	10 ± 3		
			^{181}Ta (n,p)	99·9877			
0·482	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·483	^{87}Y	80·0h	^{84}Sr (α,p)	0·56			D^{87m}Y P^{87m}Sr
0·4848	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir $(n,2n)$	61·5			
			^{192}Os $(d,2n)$	41·0			
			^{194}Pt (γ,pn)	32·9			
0·485	^{147}Gd	29h					P^{147}Eu
0·487	^{181}Re	20h					
0·487	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA) P^{211}Bi (AcC)
0·489	^{181}Re	20h					
0·489	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·490	^{202m}Pb	3·62h					
0·490	^{140}La	40·22h	^{139}La (n,γ)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (d,p)	99·911			
			^{140}Ce (n,p)	88·48			
0·490	^{193}Au	15·8h	^{191}Ir $(\alpha,2n)$	38·5		0·55	D^{193}Hg
			^{192}Pt (d,n)	0·78			D^{193m}Hg
			^{194}Pt $(d,3n)$	32·9			P^{193}Pt
0·49	^{115m}Cd	43d	^{114}Cd (n,γ)	28·86	0·14 ± 0·03		D^{115}Ag (9%)
			^{116}Cd (γ,n)	7·58			
			^{114}Cd (d,p)	28·86			
			^{235}U (n,f)		8×10^{-4}%		
0·49	^{115}Cd	53h	^{114}Cd (n,γ)	28·86	1·1 ± 0·3		P^{115m}In
			^{114}Cd (d,p)	28·86			D^{115}Ag (91%)
			^{116}Cd $(n,2n)$	7·58			
			^{235}U (n,f)		0·011%		
0·49	^{71m}Zn	3h					
0·491	^{199}Tl	7·4h	^{197}Au $(\alpha,2n)$	100			D^{199}Pb
			^{199}Hg $(d,2n)$	16·84			

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0·493	^{143}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant ^{143}Xe
0·493	^{136}I	86s	^{235}U (n,f)		3·1%		
0·4936	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·496	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·496	^{67}Ga	77·9h	^{66}Zn (d,n)	27·81			D^{67}Ge
			^{67}Zn (p,n)	4·11			
0·4961	^{183}Os	13·5h	^{185}Re $(p,3n)$	37·07			P^{183}Re
0·497	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{204}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·498	^{131}Ba	11·5d	^{130}Ba (n,γ)	0·101	10 ± 1		P^{131}Cs
0·498	^{103}Ru	39·8d	^{102}Ru (n,γ)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (d,p)	31·5			
			^{104}Ru (γ,n)	18·5			
			^{235}U (n,f)		3·7%		
0·498	^{103}Pd	17·0d	^{102}Pd (n,γ)	0·96	4·8 ± 1·5		P^{103m}Rh
			^{103}Rh (p,n)	100			D^{103}Ag
			^{103}Rh $(d,2n)$	100			
0·499	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·500	^{190m}Os	9·5m					D (3·2h) ^{190}Ir
0·500	^{193m}Hg	10·0h	^{197}Au $(p,5n)$	100			P^{193}Hg
							P^{193m}Au
0·500	^{234}Np	4·40d	^{235}U $(d,3n)$	0·720‡			D^{234}Pu
			^{235}U $(\alpha,p4n)$	0·720‡			
0·50	^{74}Ga	7·8m				Weak	
0·50	^{227}Ra	41·2m	^{226}Ra (n,γ)	‡	20 ± 3*		P^{227}Ac
0·5	^{177}W	130m					P^{177}Ta
							D^{177}Re
0·501	^{180m}Hf	5·5h	^{179}Hf (n,γ)	13·75		20	
0·502	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·502	^{147}Gd	29h					P^{147}Eu
0·506	^{121}Te	17d	^{121}Sb $(d,2n)$	57·25		13	D^{121m}Te
			^{121}Sb (p,n)	57·25			D^{121}I
0·507	^{152}Eu	12·7y					
0·510	^{182}Os	21·9h	^{185}Re $(p,4n)$	37·07			P (13h) ^{182}Re

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0·510	^{193m}Hg	10·0h	^{197}Au (p,5n)	100			P^{193}Hg P^{193m}Au
0·510	^{101}Mo	14·61m	^{100}Mo (n,γ) ^{100}Mo (d,p)	9·62 9·62	0·20 ± 0·05		P^{101}Tc
0·510	^{177}Ta	53h	^{175}Lu (α,2n) ^{176}Lu (α,3n) ^{177}Hf (p,n)	97·40 2·60 18·56			D^{177}W
0·510	^{208}Tl (ThC″)	3·10m				∼25	D^{212}Bi (ThC)
0·510	^{222}Rn (Rn)	3·8229d				∼0·07	D^{226}Ra P^{218}Po(RaA)
0·51	^{186}Ta	10·5m					
0·51	^{208}Bi	∼3 × 10^{4}y	^{208}Pb (d,2n)	52·3			
0·51	^{103}Pd	17·0d	^{102}Pd (n,γ) ^{103}Rh (p,n) ^{103}Rh (d,2n)	0·96 100 100	4·8 ± 1·5		P^{103m}Rh D^{103}Ag
0·51	^{62}Zn	9·33h	^{60}Ni (α,2n) ^{64}Zn (γ,2n) ^{63}Cu (p,2n)	26·16 48·89 69·1			P^{62}Cu
0·51	^{138}Xe	17m					P^{138}Cs
0·51	^{71}Zn	2·2m	^{74}Ge (n,α)	36·74			
0·511	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi D^{210}Rn D^{208}At
0·512	^{205}Bi	14·5d					D^{205}Po D^{209}At P^{205}Pb
0·512	^{106}Ag	24·0m	^{103}Rh (α,n) ^{105}Pd (d,n) ^{105}Pd (p,γ) ^{106}Pd (p,n)	100 22·2 22·2 27·3		17	
0·513	^{106}Ag	8·2d	^{103}Rh (α,n) ^{105}Pd (d,n) ^{106}Pd (p,n)	100 22·2 27·3			
0·513	^{85}Sr	64·0d	^{84}Sr (n,γ)	0·56	1·0 ± 0·3	∼100	D^{85}Y
0·513	^{106}Rh	30s					D^{106}Ru
0·515	^{160m}Ho	5·0h					D^{160}Er
0·515	^{106}Rh	130m					
0·516	^{206}Bi	6·4d	^{205}Tl (α,3n) ^{206}Pb (d,2n) ^{207}Pb (d,3n)	70·50 25·1 21·7			D^{206}Po D^{210}At

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0·517	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th ($d,2n$)	100‡			
			^{232}Th ($\alpha,p3n$)	100‡			
0·517(?)	^{234}Np	4·40d	^{235}U ($d,3n$)	0·720‡			D^{234}Pu
			^{235}U ($\alpha,p4n$)	0·720‡			
			^{235}U ($p,2n$)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U ($\alpha,p2n$)	†			
0·517	^{147}Gd	29h					P^{147}Eu
0·517	^{149}Gd	9·3d	^{147}Sm ($\alpha,2n$)	15·07			
			^{151}Eu ($p,3n$)	47·77			
0·517	^{85}Kr	10·3y	^{84}Kr (n,γ)	56·90	60 ± 20mb		
			^{235}U (n,f)		0·317%		
0·520	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As ($\alpha,2n$)	100			
			^{74}Se (α,p)	0·87			
0·52	^{222}Ra	38s				2 × 10^{-3}	D^{226}Th
							P^{218}Rn
							D^{222}Fr
0·52	^{165m}Dy	1·25m	^{164}Dy (n,γ)	28·18	510 ± 20		
0·52	^{116}Ag	2·5m					
0·52	^{115}Cd	53h	^{114}Cd (n,γ)	28·86	1·1 ± 0·3		P^{115m}In
			^{114}Cd (d,p)	28·86			D^{115}Ag(91%)
			^{116}Cd ($n,2n$)	7·58			
			^{235}U (n,f)		0·011%		
0·52	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
0·521	^{109}Sn	18·1m					Ancestor ^{109}In
							P^{109m}In
0·522	^{204}Bi	11·6h	^{204}Pb ($d,2n$)	1·40			P^{204m}Pb
			^{203}Tl ($\alpha,3n$)	29·50			D^{204}Po
0·522	^{206}Po	8·8d	^{204}Pb ($\alpha,2n$)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·525	^{77}As	38·7h	^{76}Ge (d,n)	7·67		0·8	D^{77}Ge
			^{235}U(n,f)		9·1 × 10^{-3}%		D^{77m}Ge
0·525	^{83}Rb	83d	^{81}Br ($\alpha,2n$)	49·48		~100	P^{83m}Kr
							D^{83}Sr
0·5259	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			

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0·526	^{161}Gd	3·6m	^{160}Gd (n,γ)	21·9	0·8 ± 0·3		P^{161}Tb
0·528	^{130}I	12·6h	^{129}I (n,γ)	†	11 ± 4		
			^{130}Te $(d,2n)$	34·49			
			^{130}Te (p,n)	34·49			
			^{133}Cs (n,α)	100			
0·53	^{153}Sm	47·1h	^{152}Sm (n,γ)	26·63	140 ± 40		
			^{152}Sm (d,p)	26·63			
			^{154}Sm (γ,n)	22·53			
			^{150}Nd (α,n)	5·60			
			^{154}Sm $(n,2n)$	22·53			
			^{235}U (n,f)		0·15%		
0·53	^{132}I	2·26h	^{131}I (n,γ)	†	50 ± 40		D^{132}Te
0·53	^{133}I	20·8h	^{235}U (n,f)		4·6%	94	Descendant ^{133m}Te P^{133}Xe P^{133m}Xe (2·4%) D^{133}Te
0·53	^{135}I	6·68h	^{235}U (n,f)		5·6%	27	P^{135m}Xe (30%) P^{135}Xe (70%) D^{135}Te
0·53	^{135m}Xe	15·6m	^{134}Xe (n,γ)	10·44			D^{135}I (∼30%)
			^{136}Xe $(n,2n)$	8·87			P^{135}Xe
			^{138}Ba (n,α)	71·66			
0·5317	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn D^{207}At
0·532	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·533	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·534	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·534	^{129}Sb	4·2h					P^{129}Te
0·535	^{230}Pa	17·7d	^{232}Th $(d,4n)$	100‡		Weak	P^{230}U
			^{232}Th $(\alpha,p5n)$	100‡			P^{230}Th(Io)
			^{230}Th $(d,2n)$	‡			P^{226}Ac
			^{231}Pa $(d,p2n)$	‡			
0·535	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru $(d,2n)$	12·7			
			^{100}Ru (p,n)	12·7			

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0·535	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
0·537	^{140}Ba	12·80d	^{139}Ba (*n*,γ) ^{235}U (*n*,*f*)	†	4 ± 1 6·17%		P^{140}La Descendant ^{140}Xe
0·537	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
0·538	^{149}Nd	2·0h	^{148}Nd (*n*,γ) ^{148}Nd (*d*,*p*) ^{150}Nd (*n*,2*n*)	5·72 5·72 5·60	3·7 ± 1·2		P^{149}Pm
0·538	^{206}Bi	6·4d	^{205}Tl (α,3*n*) ^{206}Pb (*d*,2*n*) ^{207}Pb (*d*,3*n*)	70·50 25·1 21·7			D^{206}Po D^{210}At
0·540	^{160m}Ho	5·0h					D^{160}Er
0·54	^{243}Bk	4·5h	^{241}Am (α,2*n*) ^{242}Cm (*d*,*n*)	† †			P^{242}Cm
0·54	^{184}Re	50d	^{181}Ta (α,*n*) ^{182}W (α,*pn*) ^{184}W (*p*,*n*) ^{183}W (*d*,*n*) ^{185}Re (*n*,2*n*)	99·9877 26·4 30·6 14·4 37·07		~0·3	
0·54	^{199}Pt	31m	^{198}Pt (*n*,γ) ^{198}Pt (*d*,*p*) ^{202}Hg (*n*,α)	7·19 7·19 29·80	3·9 ± 0·8		
0·54	^{128}I	24·99m	^{127}I (*n*,γ) ^{128}Te (*d*,2*n*) ^{128}Te (*p*,*n*)	100 31·79 31·79	5·6 ± 0·3	1·8	
0·54	^{166}Ho	> 30y					
0·542	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*) ^{203}Tl (α,3*n*)	1·40 29·50			P^{204m}Pb D^{204}Po
0·542	^{100}Tc	15·8s	^{100}Mo (*p*,*n*)	9·62		Strong	
0·542	^{110m}Ag	253d	^{109}Ag (*n*,γ) ^{109}Ag (*d*,*p*) ^{110}Pd (*d*,2*n*)	48·65 48·65 11·8	3·2 ± 0·4		P^{110}Ag
0·542	^{220}Rn(Tn)	51·5s				~0·03	D^{224}Ra (ThX) P^{216}Po(ThA)
0·545	^{129}Cs	30·7h	^{127}I (α,2*n*)	100			D^{129}Ba
0·545	^{101}Tc	14·0m	^{100}Mo (*d*,*n*) ^{102}Ru (γ,*p*)	9·62 31·5			D^{101}Mo
0·545	^{200}At	5·5h	^{209}Bi (α,4*n*)	100			P^{200}Po P^{205}Bi D^{200}Rn
0·547	^{202m}Pb	3·62h					

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0·550	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·550	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		8	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
0·550	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
~0·55(?)	^{189}Pt	11h					P^{189}Ir
							D^{189}Au
0·55	^{201}Au	26m	^{202}Hg (γ,p)	29·80			
0·55	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·551	^{91}Sr	9·67h	^{90}Sr (n,γ)	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (n,α)	17·40			P^{91}Y
			^{235}U (n,f)		5·0%		D (1·7m) ^{91}Rb
							D (14m) ^{91}Rb
0·551	^{91m}Y	50·3m	^{91}Zr (n,p)	11·23			D^{91}Sr
0·554	^{103}Ag	66m					P^{103}Pd
0·5541	^{82}Br	35·87h	^{81}Br (n,γ)	49·48	3·1 ± 0·5		
			^{81}Br (d,p)	49·48			
			^{82}Se (d,2n)	9·19			
			^{85}Rb (n,α)	72·15			
0·555	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·556	^{114m}In	50·0d	^{113}In (n,γ)	4·23	56 ± 12	3·6	P^{114}In
			^{113}In (d,p)	4·23			
			^{114}Cd (p,n)	28·86			
			^{113}Cd (d,n)	12·26			
			^{115}In (γ,n)	95·77			
			^{115}In (n,2n)	95·77			
0·556	^{104}Rh	44s	^{103}Rh (n,γ)	100	140 ± 30		D^{104m}Rh
0·5562	^{104}Ag	27m	^{106}Cd (d,α)	1·22			D^{104}Cd
0·557	^{240}Np	7·3m	^{239}Np (n,γ)	†	35 ± 10*	22	D^{240}U
0·557	^{181}Re	20h					
0·557	^{190}Ir	11d	^{187}Re (α,n)	62·93			
			^{190}Os (d,2n)	26·4			
			^{191}Ir (n,2n)	38·5			
0·558	^{193}Os	30·6h	^{192}Os (n,γ)	41·0	1·6 ± 0·4		

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·559	^{195m}Hg	40·0h	^{197}Au (*d*,4*n*)	100			P^{195m}Au
			^{197}Au (*p*,3*n*)	100			P^{195}Hg
0·560	^{96}Nb	23·35h	^{96}Zr (*p*,*n*)	2·80		61	
			^{98}Mo (*d*,α)	23·75			
~0·56	^{190}Ir	3·2h	^{187}Re (α,*n*)	62·93			P^{190m}Os
			^{189}Os (*d*,*n*)	16·1			
			^{190}Os (*d*,2*n*)	26·4			
0·56	^{211m}Po	25s	^{208}Pb (α,*n*)	52·3			P^{207m}Pb
0·56	^{76}Br	17·2h	^{76}Se (*p*,*n*)	9·02			D^{76}Kr
			^{75}As (α,3*n*)	100			
0·56	^{86m}Rb	1·02m	^{87}Rb (*n*,2*n*)	27·85			
0·56	^{113m}Ag	1·2m					D^{113}Pd
0·5605	^{76}As	26·4h	^{75}As (*n*,γ)	100	5·4 ± 1·0		
			^{75}As (*d*,*p*)	100			
			^{79}Br (*n*,α)	50·52			
			^{77}Se (γ,*p*)	7·58			
0·562	^{211}Po (AcC′)	0·52s					D^{211}Bi (AcC)
							D^{211}At
							D^{215}Rn
0·563	^{134}Cs	2·07y	^{133}Cs (*n*,γ)	100	30 ± 1		
			^{133}Cs (*d*,*p*)	100			
			^{134}Xe (*d*,2*n*)	10·44			
			^{134}Xe (*p*,*n*)	10·44			
0·563	^{127}Sb	88h	^{235}U (*n*,*f*)		0·094%		P^{127}Te (84%)
							P^{127m}Te (16%)
							D^{127}Sn
0·564	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}7\times10^{-3}$%		
0·565	^{143}Ce	33h	^{142}Ce (*n*,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (*d*,*p*)	11·07			P^{143}Pr
			^{235}U (*n*,*f*)		5·4%		Descendant ^{143}Xe
0·565	^{117}In	1·1h	^{116}Cd (*d*,*n*)	7·58			D^{117}Cd
			^{118}Sn (γ,*p*)	24·01			
0·566	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$)

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0·566	^{122}Sb	2·8d	^{121}Sb (*n*,γ)	57·25	6·8 ± 1·5	66	
			^{121}Sb (*d*,*p*)	57·25			
			^{122}Sn (*p*,*n*)	4·71			
			^{122}Sn (*d*,2*n*)	4·71			
0·569	^{134}Cs	2·07y	^{133}Cs (*n*,γ)	100	30 ± 1		
			^{133}Cs (*d*,*p*)	100			
			^{134}Xe (*d*,2*n*)	10·44			
			^{134}Xe (*p*,*n*)	10·44			
0·5697	^{207m}Pb	0·80s	^{207}Pb (*n*,*n*)	21·7			D^{207}Bi
							D^{211m}Po
0·5697	^{207}Bi	8·0y	^{208}Pb (*d*,3*n*)	52·3			D^{211}At
							P^{207m}Pb
0·570	^{107}Rh	24m	^{108}Pd (γ,*p*)	26·7			D^{107}Ru
0·570	^{97}Ru	2·88d	^{96}Ru (*n*,γ)	5·57	0·21 ± 0·02		P^{97m}Tc
							(0·04%)
			^{96}Ru (*d*,*p*)	5·57			P^{97}Tc
							(99·96%)
			^{96}Ru (*n*,2*n*)	1·91			D^{97}Rh
			^{98}Ru (γ,*n*)	1·91			
			^{94}Mo (α,*n*)	9·12			
0·570	^{147}Gd	29h					P^{147}Eu
0·57	^{190}Re	2·8m					
0·57	^{114}Ag	5s	^{114}Cd (*n*,*p*)	28·86			D^{114}Pd
0·57	^{150}Pm	2·7h	^{150}Nd (*p*,*n*)	5·60			
			^{150}Nd (*d*,2*n*)	5·60			
0·57	^{240}Np	60m	^{239}Np (*n*,γ)	†	25 ± 15*		
0·571	^{205}Bi	14·5d				2·3	D^{205}Po
							D^{209}At
							P^{205}Pb
0·573	^{121}Te	17d	^{121}Sb (*d*,2*n*)	57·25		87	D^{121m}Te
			^{121}Sb (*p*,*n*)	57·25			D^{121}I
0·574	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
0·575	^{110m}Ag	253d	^{109}Ag (*n*,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (*d*,*p*)	48·65			
			^{110}Pd (*d*,2*n*)	11·8			
0·576	^{69}Ge	40·4h	^{69}Ga (*d*,2*n*)	60·2			D^{69}As
			^{69}Ga (*p*,*n*)	60·2			
			^{66}Zn (α,*n*)	27·81			
0·579	^{200}Tl	26·1h	^{197}Au (α,*n*)	100			D^{200}Pb
			^{200}Hg (*d*,2*n*)	23·13			
0·580	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb

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0·580(?)	^{223}Ra	11·68d					D^{227}Th
	(AcX)						(RdAc)
							D^{223}Fr(AcK)
							P^{219}Rn(An)
							D^{223}Ac
0·580	^{206}Po	8·8d	^{204}Pb (α,2*n*)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·58	^{196}Ir	9·7d	^{196}Pt (*n*,*p*)	25·2			
0·58	^{61}Cu	3·32h	^{60}Ni (*d*,*n*)	26·16		1·5	D^{61}Zn
			^{61}Ni (*p*,*n*)	1·25			
			^{60}Ni (*p*,γ)	26·16			
			^{63}Cu (γ,2*n*)	69·1			
0·58	^{25}Na	60s	^{25}Mg (*n*,*p*)	10·11			
			^{26}Mg (γ,*p*)	11·29			
0·58	^{148}Eu	54d	^{148}Sm (*p*,*n*)	11·27			
			^{147}Sm (*d*,*n*)	15·07			
0·58	^{238}Am	1·9h	^{239}Pu (*d*,3*n*)	†			
0·582	^{208}Tl	3·10m				~80	D^{212}Bi(ThC)
	(ThC″)						
0·584	^{232}Pa	1·31d	^{231}Pa (*n*,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (α,*p*3*n*)	100‡			
0·584	^{95m}Tc	60d	^{95}Mo (*d*,2*n*)	15·70			
			^{95}Mo (*p*,*n*)	15·70			
			^{94}Mo (*d*,*n*)	9·12			
0·585	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl
							D (62m) ^{201}Bi
							D (1·85h) ^{201}Bi
0·585	^{129}Cs	30·7h	^{127}I (α,2*n*)	100			D^{205}Po
0·585	^{131}Ba	11·5d	^{130}Ba (*n*,γ)	0·101	10 ± 1		D^{129}Ba
0·586	^{152}Eu	12·7y					P^{131}Cs
0·588	^{192}Au	4·7h	^{191}Ir (α,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
0·588	^{135}La	19·5h	^{133}Cs (α,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
0·588	^{89m}Zr	4·4m	^{89}Y (*p*,*n*)	100			D^{89m}Nb
			^{90}Zr (*n*,2*n*)(?)	51·46			
			^{90}Zr (γ,*n*)	51·46			

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0·5884	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir ($n,2n$)	61·5			
			^{192}Os ($d,2n$)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·590	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
0·590	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12		P^{233}Pa
			^{232}Th (d,p)	100‡			
0·59	^{62}Zn	9·33h	^{60}Ni ($\alpha,2n$)	26·16			P^{62}Cu
			^{64}Zn ($\gamma,2n$)	48·89			
			^{63}Cu ($p,2n$)	69·1			
0·59	^{101}Pd	8·5h				15	P (4·7d) ^{101}Rh
0·59(?)	^{146}Pr	24·4m					D^{146}Ce
0·591	^{43}K	22·4h	^{40}Ar (α,p)	99·600			
0·592	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re ($d,2n$)	37·07			
0·593	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*	4	
			^{153}Eu (d,p)	52·23			
0·596	^{74}As	17·5d	^{71}Ga (α,n)	39·8			
			^{73}Ge (d,n)	7·67			
			^{74}Ge (p,n)	36·74			
			^{75}As ($n,2n$)	100			
0·600	^{195}Hg	9·5h	^{197}Au ($p,3n$)	100			D^{195m}Hg D^{195}Tl
0·600	^{240}Np	7·3m	^{239}Np (n,γ)	†	35 ± 10*	13	D^{240}U
0·60	^{208}Po	2·93y	^{206}Pb ($\alpha,2n$)	25·1		~0·006	D^{212}Rn
			^{207}Pb ($\alpha,3n$)	21·7			D (1·7h) ^{208}At
			^{209}Bi ($d,3n$)	100			D (6·3h) ^{208}At
			^{209}Bi ($p,2n$)	100			
0·60	^{100}Tc	15·8s	^{100}Mo (p,n)	9·62		Strong	
0·60	^{74}Ga	7·8m					
0·60	^{153}Sm	47·1h	^{152}Sm (n,γ)	26·63	140 ± 40		
			^{152}Sm (d,p)	26·63			
			^{154}Sm (γ,n)	22·53			
			^{150}Nd (α,n)	5·60			
			^{154}Sm ($n,2n$)	22·53			
			^{235}U (n,f)		0·15%		

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0·60	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{144}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·60	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·60	^{108}Ag	2·3m	^{107}Ag (n,γ)	51·35	45 ± 4		
			^{107}Ag (d,p)	51·35			
			^{108}Cd (n,p)	0·88			
~0·60	^{241}Cm	35d	^{239}Pu (α,3n)	†			P^{237m}Pu
			^{241}Am (p,n)	†			
0·60	^{240}Np	60m	^{239}Np (n,γ)	†	25 ± 15*		
0·60	^{131}Te	24·8m	^{130}Te (n,γ)	34·49	0·22 ± 0·05		D^{131}Sb
			^{130}Te (d,p)	34·49			P^{131}I
							D^{131m}Te
0·6	^{157}Eu	15·4h	^{235}U (n,f)		7·4 × 10^{-3}%		
0·6	^{133}Te	2m	^{235}U (n,f)		4·5%		D^{133m}Te
							P^{133}I
0·601	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn − β^-				
0·601	^{193m}Hg	10·0h	^{197}Au (p,5n)	100			P^{193}Hg
							P^{193m}Au
0·603	^{124}I	4·5d	^{121}Sb (α,n)	57·25			
			^{124}Te (p,n)	4·61			
			^{123}Sb (α,3n)	42·75			
0·603(?)	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$) (0·63%)
0·603	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn (d,2n)	5·98			
			^{124}Sn (p,n)	5·98			
0·604	^{190}Ir	11d	^{187}Re (α,n)	62·93			
			^{190}Os (d,2n)	26·4			
			^{191}Ir (n,2n)	38·5			
0·605	^{134}Cs	2·07y	^{133}Cs (n,γ)	100	30 ± 1		
			^{133}Cs (d,p)	100			
			^{134}Xe (d,2n)	10·44			
			^{134}Xe (p,n)	10·44			

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0·605	^{51}Ti	5·79m	^{50}Ti (n,γ)	5·25	0·14 ± 0·03		
			^{50}Ti (d,p)	5·25			
			^{51}V (n,p)	99·75			
0·605	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir ($n,2n$)	61·5			
			^{192}Os ($d,2n$)	41·0			
			^{194}Pt (γ,pn)	32·9			
0·6064	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·607	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag ($p,3n$)	51·35			
			^{106}Cd ($n,2n$)	1·22			
0·609	^{218}Rn	0·19s				0·2	D^{222}Ra
							P^{214}Po (RaC′)
0·6094	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po (RaC′)
							P^{210}Tl (RaC″)
0·610	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·610	^{103}Ru	39·8d	^{102}Ru (n,γ)	31·5	1·44 ± 0·16		P^{103m}Rh
			^{102}Ru (d,p)	31·5			
			^{104}Ru (γ,n)	18·5			
			^{235}U (n,f)		3·7%		
0·61	^{186}Ta	10·5m					
0·61	^{71m}Zn	3h					
0·61	^{135}Xe	9·13h	^{134}Xe (n,γ)	10·44	0·2 ± 0·1		D^{135}I (∼70%)
			^{136}Xe ($n,2n$)	8·87			D^{135m}Xe
			^{134}Xe (d,p)	10·44			P^{135}Cs
			^{138}Ba (n,α)	71·66			
			^{235}U (n,f)		5·9%		
0·61	^{226}Ra	1622y				∼2 × 10^{-4}	D^{230}Th(Io)
							P^{222}Rn(Rn)
0·61	^{106}Rh	130m					
0·61	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			

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0·612	^{192}Au	4·7h	^{191}Ir (*α*,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
0·613	^{192}Ir	74·37d	^{191}Ir (*n*,*γ*)	38·5	700 ± 200		
			^{191}Ir (*d*,*p*)	38·5			
			^{193}Ir (*n*,2*n*)	61·5			
			^{192}Os (*d*,2*n*)	41·0			
			^{194}Pt (*γ*,*pn*)	32·9			
0·614	^{43}K	22·4h	^{40}Ar (*α*,*p*)	99·600			
0·614	^{190m}Os	9·5m					D (3·2h) ^{190}Ir
0·615	^{76}As	91·0m	^{81}Br (*n*,*α*)	49·48			D^{76}Ge
			^{76}Se (*n*,*p*)	23·52			
			^{235}U (*n*,*f*)		0·02%		
0·6155	^{181}Hf	44·6d	^{180}Hf (*n*,*γ*)	35·22	10 ± 3		
			^{181}Ta (*n*,*p*)	99·9877			
0·618	^{112}Ag	3·20h	^{112}Cd (*n*,*p*)	24·07			D^{112}Pd
			^{113}Cd (*γ*,*p*)	12·26			
			^{115}In (*n*,*α*)	95·77			
0·6187	^{82}Br	35·87h	^{81}Br (*n*,*γ*)	49·48	3·1 ± 0·5		
			^{81}Br (*d*,*p*)	49·48			
			^{82}Se (*d*,2*n*)	9·19			
			^{85}Rb (*n*,*α*)	72·15			
0·6189	^{187}W	24·0h	^{186}W (*n*,*γ*)	28·4	34 ± 7		
			^{186}W (*d*,*p*)	28·4			
0·619	^{110m}Ag	253d	^{109}Ag (*n*,*γ*)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (*d*,*p*)	48·65			
			^{110}Pd (*d*,2*n*)	11·8			
0·620	^{131}Ba	11·5d	^{130}Ba (*n*,*γ*)	0·101	10 ± 1		P^{131}Cs
0·62	^{194}Ir	19·0h	^{193}Ir (*n*,*γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (*γ*,*p*)	33·8			
			^{196}Pt (*γ*,*pn*)	25·2			
0·62	^{190}Ir	3·2h	^{187}Re (*α*,*n*)	62·93			P^{190m}Os
			^{189}Os (*d*,*n*)	16·1			
			^{190}Os (*d*,2*n*)	26·4			
0·62	^{132}I	2·26h	^{131}I (*n*,*γ*)	†	50 ± 40		D^{132}Te
0·62	^{102}Rh	210d	^{101}Ru (*d*,*n*)	17·0			
			^{103}Rh (*n*,2*n*)	100			
			^{103}Rh (*γ*,*n*)	100			
0·62	^{99}Rh	4·7h	^{99}Ru (*p*,*n*)	12·7		20	D^{99}Pd
			^{98}Ru (*d*,*n*)	1·91			
0·62	^{80}Br	17·6m	^{79}Br (*n*,*γ*)	50·52	8·5 ± 1·4		D^{80m}Br
			^{79}Br (*d*,*p*)	50·52			
			^{81}Br (*γ*,*n*)	49·48			
			^{81}Br (*n*,2*n*)	49·48			

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0·621	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·622	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·624	^{106}Rh	30s					D^{106}Ru
0·624	^{106}Ag	8·2d	^{103}Rh (α,*n*)	100			
			^{105}Pd (*d*,*n*)	22·2			
			^{108}Pd (*p*,*n*)	27·3			
			^{107}Ag (*n*,2*n*)	51·35			
0·6263	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·627	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·627	^{43}Sc	3·92h	^{43}Ca (*p*,*n*)	0·145			
			^{42}Ca (*d*,*n*)	0·64			
0·627	^{186}Re	88·9h	^{185}Re (*n*,γ)	37·07	100 ± 20		
			^{187}Re (γ,*n*)	62·93			
			^{185}Re (*d*,*p*)	37·07			
			^{187}Re (*n*,2*n*)	62·93			
			^{186}W (*d*,2*n*)	28·4			
0·628	^{75}Ge	82m	^{74}Ge (*n*,γ)	36·74	0·21 ± 0·08		
			^{74}Ge (*d*,*p*)	36·74			
			^{76}Ge (*n*,2*n*)	7·67			
			^{75}As (*n*,*p*)	100			
0·629	^{201m}Pb	61s	^{203}Tl (*p*,3*n*)	29·50			D (1·85h) ^{201}Bi
0·629	^{201}Bi	1·85h					P^{201}Pb
							P^{201m}Pb
							D^{201}Po(?)
0·629	^{200}Tl	26·1h	^{197}Au (α,*n*)	100			D^{200}Pb
			^{200}Hg (*d*,2*n*)	23·13			
0·630	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·630	^{72}Ga	14·3h	^{71}Ga (*n*,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d*,*p*)	39·8			
			^{72}Ge (*n*,*p*)	27·37			
			^{72}Zn–β^-				
0·63	^{177}Ta	53h	^{175}Lu (α,2*n*)	97·40			D^{177}W
			^{176}Lu (α,3*n*)	2·60			
			^{177}Hf (*p*,*n*)	18·56			

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γ-Energy (Mev)	Nuclide	Half-Life	Some Modes of Formation	Per Cent Abundance of Relevant Stable Isotope	Thermal Neutron Activation Cross Section (Barns) or Fission Yield	Per Cent Abundance of γ-Radiation	Radioactive Parent or Daughter of
0·63	^{145}Eu	5d	^{147}Sm (p,3n)	15·07			D^{149}Tb
0·63	^{142}La	77m					D^{142}Ba
0·63	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge (d,2n)	27·37			
			^{74}Se (d,α)	0·87			
0·63	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		3·7 × 10^{-3}%		
0·631	^{186}Ir	15h					D^{186}Pt
0·632	^{206}Bi	6·4d	^{205}Tl (α,3n)	70·50			D^{206}Po
			^{206}Pb (d,2n)	25·1			D^{210}At
			^{207}Pb (d,3n)	21·7			
0·633	^{188}Re	16·7h	^{187}Re (n,γ)	62·93	75 ± 15	1·0	D^{188}W
			^{187}Re (d,p)	62·93			
0·634	^{188}Ir	41·5h	^{187}Re (α,3n)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os (d,2n)	13·3			
			^{189}Os (d,3n)	16·1			
0·635	^{74}As	17·5d	^{71}Ga (α,n)	39·8			
			^{73}Ge (d,n)	7·67			
			^{74}Ge (p,n)	36·74			
			^{75}As (n,2n)	100			
0·635	^{88}Y	14·6h	^{88}Sr (p,3n)	82·56			D^{88}Zr
0·635	^{147}Gd	29h					P^{147}Eu
0·636	^{230}Pa	17·7d	^{232}Th (d,4n)	100‡			P^{230}U
			^{232}Th (α,p5n)	100‡			P^{230}Th(Io)
			^{230}Th (d,2n)	‡			P^{226}Ac
			^{231}Pa (d,p2n)	‡			
0·637	^{108m}In	55m	^{108}Cd (d,2n)	0·88			D^{108}Sn
0·637	^{108}In	40m	^{108}Cd (d,2n)	0·88			
0·637	^{131}I	8·08d	^{130}Te (d,n)	34·49		9	D^{131}Te
			^{235}U (n,f)		2·8%		P^{131m}Xe (~1%)
0·638	^{181}Re	20h					
0·640	^{95}Ru	1·65h	^{96}Ru (n,2n)	5·57			
			^{92}Mo (α,n)	15·86			
0·64	^{194}Au	39·5h	^{193}Ir (α,3n)	61·5			D^{194}Hg
			^{194}Pt (d,2n)	32·9			
			^{195}Pt (d,3n)	33·8			
			^{194}Pt (p,n)	32·9			
0·64	^{74}Br	36m					

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0·64	^{125}Sb	2·0y	^{124}Sn (d,n)	5·98			D (9·4d) ^{125}Sn
			^{235}U (n,f)		0·023%		P^{125m}Te
0·64	^{125}Sn	9·5m	^{124}Sn (n,γ)	5·98	0·2 ± 0·1	0·3	
			^{124}Sn (d,p)	5·98			
0·64	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028%		
0·64	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·641	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As $(\alpha,2n)$	100			
			^{74}Se (α,p)	0·87			
0·642	^{184}Re	50d	^{181}Ta (α,n)	99·9877		~0·5	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re $(n,2n)$	37·07			
0·643	^{194}Ir	19·0h	^{193}Ir (n,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (d,p)	61·5			
			^{195}Pt (γ,p)	33·8			
			^{196}Pt (γ,pn)	25·2			
0·645	^{91}Sr	9·67h	^{90}Sr (n,γ)	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (n,α)	17·40			P^{91}Y
			^{235}U (n,f)		5·0%		D (1·7m) ^{91}Rb D (14m) ^{91}Rb
0·646	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
0·646	^{204}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{204}Bi D^{210}Rn D^{204}At
0·646	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re $(d,2n)$	37·07			
0·648	^{76}As	26·4h	^{75}As (n,γ)	100	5·4 ± 1·0		
			^{75}As (d,p)	100			
			^{79}Br (n,α)	50·52			
			^{77}Se (γ,p)	7·58			

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0·648	^{160m}Ho	5·0h					D^{160}Er
0·650	^{83}Se	70s	^{82}Se (n,γ)	9·19	50 ± 25mb		P^{83}Br
			^{235}U (n,f)		0·21 %		
0·650	^{149}Nd	2·0h	^{148}Nd (n,γ)	5·72	3·7 ± 1·2		P^{149}Pm
			^{148}Nd (d,p)	5·72			
			^{150}Nd $(n,2n)$	5·60			
0·65	^{160}Ho	28m	^{159}Tb $(\alpha,3n)$	100			
0·65	^{144}Pm	300d					
0·65	^{149}Gd	9·3d	^{147}Sm $(\alpha,2n)$	15·07			
			^{151}Eu $(p,3n)$	47·77			
0·65	^{51}Cr	27·8d	^{50}Cr (n,γ)	4·31	13·5 ± 1·4	5 × 10^{-4}	D^{51}Mn
			^{50}Cr (d,p)	4·31			
			^{48}Ti (α,n)	73·99			
			^{51}V (p,n)	99·75			
			^{52}Cr $(n,2n)$	83·76			
0·65	^{126}Sb	19m					
0·65	^{224}Ra (ThX)	3·64d	^{223}Ra (n,γ)	‡	130 ± 20*	~9 × 10^{-3}	D^{228}Th (RdTh) P^{220}Rn(Tn) D^{224}Ac
0·65	^{126}I	13·3d	^{123}Sb (α,n)	42·75			
			^{125}Te (d,n)	6·99			
			^{126}Te (p,n)	18·71			
			^{127}I $(n,2n)$	100			
			^{127}I (γ,n)	100			
0·65	^{98}Rh	8·7m					D^{98}Pd
0·65	^{87}Zr	94m	^{84}Sr (α,n)	0·56			P^{87m}Y
0·65	^{98}Tc	1·5 × 10^{6}y					
0·656	^{110}In	66m	^{107}Ag (α,n)	51·35			D^{110}Sn
			^{110}Cd (p,n)	12·39			
			^{110}Cd $(d,2n)$	12·39			
0·657	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·657	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·658	^{91m}Mo	66s	^{92}Mo (γ,n)	15·86			
0·658	^{202m}Pb	3·62h					
0·658	^{109m}In	< 2m					D^{109}Sn
0·658	^{109}Sn	18·1m					Ancestor ^{109}In P^{109m}In

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0·660	^{130}I	12·6h	^{129}I (n,γ)	†	11 ± 4		
			^{130}Te $(d,2n)$	34·49			
			^{130}Te (p,n)	34·49			
0·66	^{195}Ir	2·3h	^{196}Pt (γ,p)	25·2			D^{195}Os
			^{195}Pt (n,p)	33·8			
0·66	^{208}At	1·6h					D^{212}Fr
							P^{208}Po
0·66	^{110}Ag	24·2s	^{110}Cd (n,p)	12·39			D^{110m}Ag
0·66	^{38}Cl	1·0s					
0·66	^{145}Eu	5d	^{147}Sm $(p,3n)$	15·07			D^{149}Tb
0·66	^{61}Cu	3·32h	^{60}Ni (d,n)	26·16		11	D^{61}Zn
			^{61}Ni (p,n)	1·25			
			^{60}Ni (p,γ)	26·16			
			^{63}Cu $(\gamma,2n)$	69·1			
0·66	^{254}E	37h	^{253}E (n,γ)	†	300 ± 150*	40	P^{254}Fm
							P^{254}Cf
0·661	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·661	^{110m}In	5·0h	^{109}Ag $(\alpha,3n)$	48·65			
0·6616	^{137}Cs	26·6y	^{137}Ba (n,p)	11·32			P^{137m}Ba
							D^{137}Xe
0·6616	^{137m}Ba	2·60m	^{138}Ba $(n,2n)$	71·66			D^{137}Cs
0·662(?)	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·662	^{204m}Pb	66·9m	^{203}Tl (d,n)	29·50			D^{204}Bi
			^{205}Tl $(d,3n)$	70·50			
			^{204}Pb (n,n)	1·40			
0·663	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr
							P^{89}Sr
0·663	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·665	^{97}Nb	72·1m	^{97}Mo (n,p)	9·45			D^{97m}Nb
			^{98}Mo (γ,p)	23·75			
0·665	^{77}Kr	1·1h	^{74}Se (α,n)	0·87			
0·668	^{142}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant ^{143}Xe
0·669	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At

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0·670	^{207}Po	5·7h	^{206}Pb (*α*,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·670	^{233}Th	22·12m	^{232}Th (*n*,*γ*)	100‡	7·33 ± 0·12	0·25	P^{233}Pa
			^{232}Th (*d*,*p*)	100‡			
0·67	^{211}At	7·20h	^{209}Bi (*α*,2*n*)	100		Weak	P^{207}Bi
							D^{211}Rn
							P(0·52s)^{211}Po (AcC′)
~0·67	^{165}Dy	139·2m	^{164}Dy (*n*,*γ*)	28·18	2100 ± 300*		
0·67	^{132}Cs	6·2d	^{133}Cs (*n*,2*n*)	100			
			^{132}Xe (*d*,2*n*)	26·89			
			^{132}Xe (*p*,*n*)	26·89			
0·67	^{132}I	2·26h	^{131}I (*n*,*γ*)	†	50 ± 40		D^{132}Te
0·67	^{127m}Te	105d	^{126}Te (*n*,*γ*)	18·71	90 ± 20mb		P^{127}Te
			^{126}Te (*d*,*p*)	18·71			D^{127}Sb (16%)
			^{127}I (*n*,*p*)	100			
			^{235}U (*n*,*f*)		0·033%		
0·67	^{99}Pd	21·6m					P (4·7h)^{99}Rh
0·67	^{127}Sb	88h	^{235}U (*n*,*f*)		0·094%		P^{127}Te (84%)
							P^{127m}Te (16%)
							D^{127}Sn
0·671	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (*α*,3*n*)	29·50			D^{204}Po
0·673	^{188}Re	16·7h	^{187}Re (*n*,*γ*)	62·93	75 ± 15	0·09	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
0·675	^{198}Au	2·697d	^{197}Au (*n*,*γ*)	100	96 ± 10		
			^{197}Au (*d*,*p*)	100			
			^{198}Hg (*n*,*p*)	10·02			
			^{198}Pt (*p*,*n*)	10·02			
0·675	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
0·675	^{198}Tl	5·3h					
0·677	^{110m}Ag	253d	^{109}Ag (*n*,*γ*)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (*d*,*p*)	48·65			
			^{110}Pd (*d*,2*n*)	11·8			
0·678	^{208}Po	8·8d	^{204}Pb (*α*,2*n*)	1·40			P^{208}Bi
							D^{210}Rn
							D^{208}At
0·680	^{107}Rh	24m	^{108}Pd (*γ*,*p*)	26·7			D^{107}Ru
0·680	^{211}Rn	16h	^{209}Bi (*α*,2*n*)	100			P^{211}At
							P^{207}Po

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0·68	^{93}Y	10·4h					D^{93}Sr
0·68	^{76}Br	17·2h	^{76}Se (p,n)	9·02			D^{76}Kr
			^{75}As $(\alpha,3n)$	100			
0·68	^{67}Ge	21m	^{70}Ge $(d,p4n)$	20·55			P^{67}Ga
0·685	^{93m}Mo	6·95h	^{92}Mo (n,γ)	15·86	$<$6mb		
			^{90}Zr (α,n)	51·46			
			^{93}Nb (p,n)	100			
			^{93}Nb $(d,2n)$	100			
0·686	^{122}Sb	2·8d	^{121}Sb (n,γ)	57·25	6·8 ± 1·5	3·4	
			^{121}Sb (d,p)	57·25			
			^{122}Sn (p,n)	4·71			
			^{122}Sn $(d,2n)$	4·71			
0·6861	^{187}W	24·0h	^{186}W (n,γ)	28·4	34 ± 7		
			^{186}W (d,p)	28·4			
0·688	^{147}Nd	11·06d	^{146}Nd (n,γ)	17·18	1·8 ± 0·6		P^{147}Pm
			^{146}Nd (d,p)	17·18			
			^{235}U (n,f)		2·6%		
0·688	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·689	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·690	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·690	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
0·690	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn $- \beta^-$				
0·69	^{57}Mn	1·7m				Weak	
0·69	^{203}Au	55s	^{204}Hg (γ,p)	6·85			
0·69	^{62}Cu	9·73m	^{60}Ni (α,pn)	26·16			D^{62}Zn
			^{63}Cu $(n,2n)$	69·1			
			^{63}Cu (γ,p)	69·1			
0·692	^{152}Eu	12·7y					
0·692	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl
							D (62m)^{201}Bi
							D (1·85h) ^{201}Bi
							D^{205}Po
0·692	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po

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0·694	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*		
			^{153}Eu (d,p)	52·23			
0·696	^{144}Pr	17·27m				Weak	D^{144}Ce
0·6984	^{82}Br	35·87h	^{81}Br (n,γ)	49·48	3·1 ± 0·5		
			^{81}Br (d,p)	49·48			
			^{82}Se $(d,2n)$	9·19			
			^{85}Rb (n,α)	72·15			
0·700	^{78}As	91·0m	^{81}Br (n,α)	49·48			D^{78}Ge
			^{78}Se (n,p)	23·52			
			^{235}U (n,f)		0·02%		
0·70	^{116}Ag	2·5m					
0·70	^{128}Ba	97m					P^{128}Cs
0·70(?)	^{189}Pt	11h					P^{189}Ir
							D^{189}Au
0·70	$^{202m.204m}$Tl	$6{\cdot}2 \times 10^{-5}$s					
0·70	^{113m}Ag	1·2m					D^{113}Pd
0·70	^{167}Ho	3·0h	^{168}Er (γ,p)	27·07		~6	
0·70	^{150}Pm	2·7h	^{150}Nd (p,n)	5·60			
			^{150}Nd $(d,2n)$	5·60			
0·70	^{102}Rh	210d	^{101}Ru (d,n)	17·0			
			^{103}Rh $(n,2n)$	100			
			^{103}Rh (γ,n)	100			
0·70	^{94}Nb	$1{\cdot}8 \times 10^{4}$y	^{93}Nb (n,γ)	100		92	
0·701	^{210}At	8·3h	^{209}Bi $(\alpha,3n)$	100			P^{210}Po
							P^{206}Bi
0·701	^{193m}Hg	10·0h	^{197}Au $(p,5n)$	100			P^{193}Hg
							P^{193m}Au
0·703	^{205}Bi	14·5d				14·5	D^{205}Po
							D^{209}At
							P^{205}Pb
0·704	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
0·705	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·706	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*		
			^{153}Eu (d,p)	52·23			
0·708(?)	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl
							D(62m)^{201}Bi
							D (1·85h) ^{201}Bi
							D^{205}Po

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·709	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·710	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·71	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		$3{\cdot}7 \times 10^{-3}\%$		
0·71	^{100}Tc	15·8s	^{100}Mo (p,n)	9·62			
0·712	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg $(d,2n)$	23·13			
0·712	^{230}Pa	17·7d	^{232}Th $(d,4n)$	100‡			P^{230}U
			^{232}Th $(\alpha,p5n)$	100‡			P^{230}Th(Io)
			^{230}Th $(d,2n)$	‡			P^{226}Ac
			^{231}Pa $(d,p2n)$	‡			
0·714	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
0·715	^{151}Pm	27·5h					D^{151}Nd
0·718	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re $(d,2n)$	37·07			
0·719	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·720	^{234}Np	4·40d	^{235}U $(d,3n)$	0·720‡			D^{234}Pu
			^{235}U $(\alpha,p4n)$	0·720‡			
			^{235}U $(p,2n)$	0·720‡			
			^{233}U (d,n)	†			
			^{233}U $(\alpha,p2n)$	†			
0·720	^{166}Ho	> 30y					
0·72	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag $(n,2n)$	51·35			
0·72	^{199}Pt	31m	^{198}Pt (n,γ)	7·19	3·9 ± 0·8		
			^{198}Pt (d,p)	7·19			
			^{202}Hg (n,α)	29·80			
0·72	^{110}Ag	24·2s	^{110}Cd (n,p)	12·39		Weak	D^{110m}Ag
0·72	^{101}Pd	8·5h					P (4·7d) ^{101}Rh
0·72	^{10}C	19·1s	^{10}B (p,n)	18·45		99	

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0·72	^{168}Tm	85d	^{165}Ho (α,n)	100			
			^{163}Er (p,n)	27·07			
			^{169}Tm (n,2n)	100			
0·72	^{129}Te	72m	^{128}Te (n,γ)	31·79	0·13 ± 0·03		D^{129m}Te
			^{128}Te (d,p)	31·79			D^{129}Sb
			^{130}Te (n,2n)	34·49			
			^{130}Te (γ,n)	34·49			
0·72	^{129m}Te	33·5d	^{128}Te (n,γ)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (d,p)	31·79			
			^{130}Te (n,2n)	34·49			
			^{235}U (n,f)		0·19%		
0·72	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{103}Ru (γ,p)	31·5			
0·721	^{199}Pb	90m					P^{199}Tl
							D^{199}Bi
0·722	^{95}Zr	65d	^{94}Zr (n,γ)	17·40	0·09 ± 0·03		P^{95}Nb
			^{94}Zr (d,p)	17·40			P^{95m}Nb
			^{235}U (n,f)		6·0%		
0·722	^{143}Ce	33h	^{142}Ce (n,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (d,p)	11·07			P^{143}Pr
			^{235}U (n,f)		5·4%		Descendant ^{143}Xe
0·722	^{131}I	8·08d	^{130}Te (d,n)	34·49		3	D^{131}Te
			^{235}U (n,f)		2·8%		P^{131m}Te (~1%)
0·7224	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·723	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd (d,2n)	11·8			
0·723	^{114m}In	50·0d	^{113}In (n,γ)	4·23	56 ± 12	3·5	P^{114}In
			^{113}In (d,p)	4·23			
			^{114}Cd (p,n)	28·86			
			^{113}Cd (d,n)	12·26			
			^{115}In (γ,n)	95·77			
			^{115}In (n,2n)	95·77			
0·723	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn (d,2n)	5·98			
			^{124}Sn (p,n)	5·98			
0·725	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*	21	
			^{153}Eu (d,p)	52·23			

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0·726	^{105}Ru	4·5h	^{104}Ru (n,γ)	18·5	0·7 ± 0·2		P^{105m}Rh
			^{104}Ru (d,p)	18·5			D^{105}Tc
			^{235}U (n,f)		0·9%		Ancestor ^{105}Rh
							Descendant ^{105}Mo
0·730	^{160m}Ho	5·0h					D^{160}Er
0·73	^{52}Mn	5·60d	^{52}Cr (p,n)	83·76			
			^{52}Cr ($d,2n$)	83·76			
			^{54}Fe (d,α)	5·84			
0·73	^{186}Ta	10·5m					
0·73	^{160}Ho	28m	^{159}Tb ($\alpha,3n$)	100			
0·73	^{145}Eu	5d	^{147}Sm ($p,3n$)	15·07			D^{149}Tb
0·73	^{151}Nd	15m					P^{151}Pm
0·73	^{124}I	4·5d	^{121}Sb (α,n)	57·25			
			^{124}Te (p,n)	4·61			
			^{123}Sb ($\alpha,3n$)	42·75			
0·73	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
0·732	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$) (0·63%)
0·740	^{206}Bi	6·4d	^{205}Tl ($\alpha,3n$)	70·50			D^{206}Po
			^{206}Pb ($d,2n$)	25·1			D^{210}At
			^{207}Pb ($d,3n$)	21·7			
0·74	^{243}Bk	4·5h	^{241}Am ($\alpha,2n$)	†			P^{243}Cm
			^{242}Cm (d,n)	†			
0·74	^{139m}Ce	55s	^{138}Ce (n,γ)	0·250	7 ± 5mb		
			^{139}La ($d,2n$)	99·911			
			^{139}La (p,n)	99·911			
			^{140}Ce ($n,2n$)	88·48			
0·74	^{126}I	13·3d	^{123}Sb (α,n)	42·75			
			^{125}Te (d,n)	6·99			
			^{126}Te (p,n)	18·71			
			^{127}I ($n,2n$)	100			
			^{127}I (γ,n)	100			
0·74	^{106}Rh	130m					
0·74	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			

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0·74	^{99}Mo	66·0h	^{98}Mo (n,γ)	23·75	0·45 ± 0·10		P^{99m}Tc
			^{96}Zr (α,n)	2·80			
			^{98}Mo (d,p)	23·75			
			^{100}Mo ($n,2n$)	9·62			
			^{100}Mo (γ,n)	9·62			
			^{235}U (n,f)		6·2%		
0·74	^{98}Tc	1·5 × 10^{6}y					
0·74	^{65}Ga	15·2m	^{64}Zn (d,n)	48·89			P^{65}Zn
			^{64}Zn (p,γ)	48·89			
0·742	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru ($d,2n$)	12·7			
			^{100}Ru (p,n)	12·7			
0·743	^{207}Po	5·7h	^{206}Pb ($\alpha,3n$)	25·1			D^{211}Rn
							D^{207}At
0·744	^{130}I	12·6h	^{129}I (n,γ)	†	11 ± 4		
			^{130}Te ($d,2n$)	34·49			
			^{130}Te (p,n)	34·49			
			^{133}Cs (n,α)	100			
0·745	^{205}Bi	14·5d					D^{205}Po
							D^{205}At
							P^{205}Pb
0·747	^{97}Zr	17·0h	^{96}Zr (n,γ)	2·80	0·1 ± 0·05		P^{97m}Nb
			^{96}Zr (d,p)	2·80			Descendant ^{97}Kr
			^{100}Mo (n,α)	9·62			
			^{235}U (n,f)		6·2%		
0·747	^{97m}Nb	60s	^{98}Mo (γ,p)	23·75			D^{97}Zr
							P^{97}Nb
0·748	^{91}Sr	9·67h	^{90}Sr (n,γ)	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (n,α)	17·40			P^{91}Y
			^{235}U (n,f)		5·0%		D (1·7m) ^{91}Rb
							D(14m)^{91}Rb
0·75	^{149}Gd	9·3d	^{147}Sm ($\alpha,2n$)	15·07			
			^{151}Eu ($p,3n$)	47·77			
0·75	^{177}Ta	53h	^{175}Lu ($\alpha,2n$)	97·40			D^{177}W
			^{176}Lu ($\alpha,3n$)	2·60			
			^{177}Hf (p,n)	18·56			
~0·75	^{165}Dy	139·2m	^{164}Dy (n,γ)	28·18	2100 ± 300*		
0·75	^{146}Pr	24·4m					D^{146}Ce
0·75	^{128}Sb	9·6h					
0·75	^{128}I	24·99m	^{127}I (n,γ)	100	5·6 ± 0·3	0·3	
			^{128}Te ($d,2n$)	31·79			
			^{128}Te (p,n)	31·79			

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0·75	^{128}Sb	10·3m					D^{128}Sn
0·75	^{76}Br	17·2h	^{76}Se (p,n)	9·02			D^{76}Kr
			^{75}As (α,3n)	100			
0·751	^{233}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12		P^{233}Pa
			^{232}Th (d,p)	100‡			
0·752	^{234}Np	4·40d	^{235}U (d,3n)	0·720‡			D^{234}Pu
			^{235}U (α,p4n)	0·720‡			
			^{235}U (p,2n)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U (α,p2n)	†			
0·754	^{95}Zr	65d	^{94}Zr (n,γ)	17·40	0·09 ± 0·03		P^{95}Nb
			^{94}Zr (d,p)	17·40			P^{95m}Nb
			^{235}U (n,f)		6·0%		
0·754	^{206}Bi	6·4d	^{205}Tl (α,3n)	70·50			D^{206}Po
			^{206}Pb (d,2n)	25·1			D^{210}At
			^{207}Pb (d,3n)	21·7			
0·755	^{160m}Ho	5·0h					D^{160}Er
0·758	^{206}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
0·7583	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·759	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*		
			^{153}Eu (d,p)	52·23			
0·760	^{238}Pu	86·4y	^{238}U (d,2n)	99·276‡		$\sim 5 \times 10^{-5}$	D^{238}Np
			^{238}U (α,4n)	99·276‡			D^{242}Cm
			^{235}U (α,n)	0·720‡			
0·76	^{196}Ir	9·7d	^{196}Pt (n,p)	25·2			
0·76	^{127}Sb	88h	^{235}U (n,f)		0·094%		P^{127}Te (84%)
							P^{127m}Te (16%)
							D^{127}Sn
0·76	^{102}Rh	210d	^{101}Ru (d,n)	17·0			
			^{103}Rh (n.2n)	100			
			^{103}Rh (γ,n)	100			
0·76	^{77}Br	57h	^{76}Se (d,n)	9·02			P^{77m}Se
			^{75}As (α,2n)	100			
			^{74}Se (α,p)	0·87			
0·761	^{206}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb

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0·762	^{95}Tc	20·0h	^{92}Mo (*α*,*p*) ^{95}Mo (*p*,*n*) ^{96}Mo (*d*,2*n*)	15·86 15·70 15·70		~90	
0·762	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
0·764	^{186}Re	88·9h	^{185}Re (*n*,*γ*) ^{187}Re (*γ*,*n*) ^{185}Re (*d*,*p*) ^{187}Re (*n*,2*n*) ^{186}W (*d*,2*n*)	37·07 62·93 37·07 62·93 28·4	100 ± 20		
0·764	^{211}Pb (AcB)	36·1m					D^{215}Po (AcA) P^{211}Bi(AcC)
0·764	^{110m}Ag	253d	^{109}Ag (*n*,*γ*) ^{109}Ag (*d*,*p*) ^{110}Pd (*d*,2*n*)	48·65 48·65 11·8	3·2 ± 0·4		P^{110}Ag
0·764	^{108}Ag	66m					P^{108}Pd
0·765	^{95}Nb	35d	^{94}Nb (*n*,*γ*) ^{97}Mo (*d*,*α*)	† 9·45	15 ± 4		D^{95}Zr D^{95}Nb
0·766	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl D (62m)^{201}Bi D (1·85h) ^{201}Bi D^{205}Po
0·767	^{160m}Ho	5·0h					D^{160}Er
0·768	^{72}Ga	14·3h	^{71}Ga (*n*,*γ*) ^{71}Ga (*d*,*p*) ^{72}Ge (*n*,*p*) ^{72}Zn–β^-	39·8 39·8 27·37	4·0 ± 0·7		D^{72}Zn
0·768	^{95m}Tc	60d	^{95}Mo (*d*,2*n*) ^{95}Mo (*p*,*n*) ^{94}Mo (*d*,*n*)	15·70 15·70 9·12			
0·768	^{82m}Rb	6·3h	^{79}Br (*α*,*n*)	50·52			
0·769	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po (RaC′) P^{210}Tl(RaC″)
0·769	^{186}Ir	15h					D^{186}Pt
0·770	^{234m}Pa	1·175m	^{233}Pa (*n*,*γ*)	†	43 ± 5		D^{234}Th (UX$_1$) P^{234}U(U$_{II}$) P^{234}Pa(UZ)

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0·770	^{147}Gd	29h					P^{147}Eu
0·770	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		100	
			^{98}Mo (d,α)	23·75			
0·77	^{109}Pd	13·5h	^{108}Pd (n,γ)	26·7	10 ± 2	Weak	[D^{109}Rh] ?
			^{108}Pd (d,p)	26·7			P^{109m}Ag
			^{110}Pd (γ,p)	11·8			
			^{109}Ag (n,p)	48·65			
			^{235}U (n,f)		0·028 %		
0·771	^{96}Tc	4·20d	^{96}Mo $(d,2n)$	16·50			
			^{96}Mo (p,n)	16·50			
			^{93}Nb (α,n)	100			
			^{95}Mo (d,n)	15·70			
0·771	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·775	^{186}Ir	15h					D^{186}Pt
0·7769	^{82}Br	35·87h	^{81}Br (n,γ)	49·48	3·1 ± 0·5		
			^{81}Br (d,p)	49·48			
			^{82}Se $(d,2n)$	9·19			
			^{85}Rb (n,α)	72·15			
0·779	^{195}Hg	9·5h	^{197}Au $(p,3n)$	100			D^{195m}Hg
							D^{195}Tl
0·780	^{209}At	5·5h	^{209}Bi $(\alpha,4n)$	100			P^{209}Po
							P^{205}Bi
							D^{209}Rn
0·78	^{210}Tl	1·32m					D^{214}Bi
	(RaC″)						(RaC)
							P^{210}Pb
							(RaD)
0·78	^{132}I	2·26h	^{131}I (n,γ)	†	50 ± 40		D^{132}Te
0·78	^{246}Am	25·0m					P^{246}Cm
							D^{246}Pu
0·78	^{184}Ta	8·7h	^{184}W (n,p)	30·6			
0·78	^{198}Ir	50s	^{198}Pt (n,p)	7·19			
0·782	^{152}Eu	12·7y					
0·783	^{192}Au	4·7h	^{191}Ir $(\alpha,3n)$	38·5			D^{192}Hg
			^{192}Pt $(d,2n)$	0·78			
0·787	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg $(d,2n)$	23·13			
0·787	^{202m}Pb	3·62h					
0·788	^{95m}Tc	60d	^{95}Mo $(d,2n)$	15·70			
			^{95}Mo (p,n)	15·70			
			^{94}Mo (d,n)	9·12			

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0·788	^{184}Re	50d	^{181}Ta (*α*,*n*)	99·9877		Weak	
			^{182}W (*α*,*pn*)	26·4			
			^{184}W (*p*,*n*)	30·6			
			^{183}W (*d*,*n*)	14·4			
			^{185}Re (*n*,2*n*)	37·07			
0·790	^{67}Ga	77·9h	^{66}Zn (*d*,*n*)	27·81			D^{67}Ge
			^{67}Zn (*p*,*n*)	4·11			
0·79	^{199}Pt	31m	^{198}Pt (*n*,*γ*)	7·19	3·9 ± 0·8		
			^{198}Pt (*d*,*p*)	7·19			
			^{202}Hg (*n*,*α*)	29·80			
0·79	^{192}Ir	74·37d	^{191}Ir (*n*,*γ*)	38·5	700 ± 200		
			^{191}Ir (*d*,*p*)	38·5			
			^{193}Ir (*n*,2*n*)	61·5			
			^{192}Os (*d*,2*n*)	41·0			
			^{194}Pt (*γ*,*pn*)	32·9			
0·79	^{149}Gd	9·3d	^{147}Sm (*α*,2*n*)	15·07			
			^{151}Eu (*p*,3*n*)	47·77			
0·79	^{129}Sb	4·2h					P^{129}Te
0·79	^{77}Ge	11·3h	^{76}Ge (*n*,*γ*)	7·67	80 ± 20mb		P^{77}As
			^{74}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,*α*)	49·82			
			^{235}U (*n*,*f*)		3·7 × 10^{-3}%		
0·791	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (*α*,3*n*)	29·50			D^{204}Po
0·793	^{184}Re	50d	^{181}Ta (*α*,*n*)	99·9877		40	
			^{182}W (*α*,*pn*)	26·4			
			^{184}W (*p*,*n*)	30·6			
			^{183}W (*d*,*n*)	14·4			
			^{185}Re (*n*,2*n*)	37·07			
0·793	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
0·796	^{134}Cs	2·07y	^{133}Cs (*n*,*γ*)	100	30 ± 1		
			^{133}Cs (*d*,*p*)	100			
			^{136}Xe (*d*,2*n*)	10·44			
			^{134}Xe (*p*,*n*)	10·44			
0·80	^{138}Pr	2·0h	^{140}Ce (*p*,3*n*)	88·48			
0·80	^{190}Ir	11d	^{187}Re (*α*,*n*)	62·93			
			^{190}Os (*d*,2*n*)	26·4			
			^{191}Ir (*n*,2*n*)	38·5			
0·80	^{222}Ra	38s				0·02	D^{226}Th P^{218}Rn D^{222}Fr

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0·8	^{172}Hf	~5y	^{170}Yb (α,2*n*)	3·03			P (6·7d) ^{172}Lu
			^{171}Yb (α,3*n*)	14·31			
			^{175}Lu (*p*,4*n*)	97·40			
~0·8	^{148}Pm	5·3d	^{147}Pm (*n*,γ)	†	60 ± 20		
			^{148}Nd (*p*,*n*)	5·72			
			^{148}Nd (*d*,2*n*)	5·72			
~0·8(?)	^{136}Pr	70m					
0·8	^{133}La	4·0h	^{133}Cs (α,4*n*)	100			D^{133}Ce
0·801	^{134}Cs	2·07y	^{133}Cs (*n*,γ)	100	30 ± 1		
			^{133}Cs (*d*,*p*)	100			
			^{134}Xe (*d*,2*n*)	10·44			
			^{134}Xe (*p*,*n*)	10·44			
0·803	^{234m}Pa	1·175m	^{233}Pa (*n*,γ)	†	43 ± 5		D^{234}Th (UX$_1$) P^{234}U(U$_{\rm II}$) P^{234}Pa(UZ)
0·803	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U$_{\rm II}$) D^{234}Pa(UX$_2$) D^{234}Th(UX$_1$) (0·63%)
0·803	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·804	^{210}Po (RaF)	138·401d	^{208}Pb (α,2*n*)	52·3			D(2·6 × 10^{6}y) ^{210}Bi(0·4%)
			^{209}Bi (*d*,*n*)	100			D^{210}At
			^{209}Bi (*p*,γ)	100			D^{210}Bi(RaE)
0·804	^{96}Nb	23·35h	^{96}Zr (*p*,*n*)	2·80		6	
			^{98}Mo (*d*,α)	23·75			
0·805	^{106}Ag	8·2d	^{103}Rh (α,*n*)	100			
			^{105}Pd (*d*,*n*)	22·2			
			^{106}Pd (*p*,*n*)	27·3			
			^{107}Ag (*n*,2*n*)	51·35			
0·806	^{96}Tc	4·20d	^{96}Mo (*d*,2*n*)	16·50			
			^{96}Mo (*p*,*n*)	16·50			
			^{93}Nb (α,*n*)	100			
			^{95}Mo (*d*,*n*)	15·70			
0·807	^{234m}Pa	1·175m	^{233}Pa (*n*,γ)	†	43 ± 5		D^{234}Th(UX$_1$) P^{234}U(U$_{\rm II}$) P^{234}Pa(UZ)

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0·808	^{206}Po	8·8d	^{204}Pb (*α*,2*n*)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·808	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re
0·810	^{72}Ga	14·3h	^{71}Ga (*n*,*γ*)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d*,*p*)	39·8			
			^{72}Ge (*n*,*p*)	27·37			
			^{72}Zn —β^-				
0·810	^{238}Pu	86·4y	^{238}U (*d*,2*n*)	99·276‡			D^{238}Np
			^{238}U (*α*,4*n*)	99·276‡			D^{242}Cm
			^{235}U (*α*,*n*)	0·720‡			
0·81	^{100}Tc	15·8s	^{100}Mo (*p*,*n*)	9·62			
0·81	^{110}Ag	24·2s	^{110}Cd (*n*,*p*)	12·39		Weak	D^{110m}Ag
0·81	^{138}La	1 × 10^{11}y		0·089			
0·81	^{84}Br	31·8m	^{87}Rb (*n*,*α*)	27·85			
0·81	^{68}Ga	68m	^{68}Zn (*p*,*n*)	18·56			D^{68}Ge
			^{67}Zn (*d*,*n*)	4·11			
			^{65}Cu (*α*,*n*)	30·9			
			^{70}Ge (*γ*,*pn*)	20·55			
0·81	^{56}Ni	6·4d	^{54}Fe (*α*,2*n*)	5·84			P^{56}Co
0·81	^{58}Co	71·3d	^{58}Ni (*n*,*p*)	67·76			
			^{55}Mn (*α*,*n*)	100			
			^{58}Fe (*p*,*n*)	0·31			
			^{56}Fe (*α*,*np*)	91·68			
0·81	^{125}Sn	9·4d	^{124}Sn (*n*,*γ*)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (*d*,*p*)	5·98			
			^{235}U (*n*,*f*)		0·012%		
0·813	^{234}Np	4·40d	^{235}U (*d*,3*n*)	0·720‡			D^{234}Pu
			^{235}U (*α*,*p*4*n*)	0·720‡			
			^{235}U (*p*,2*n*)	0·720‡			
			^{233}U (*d*,*n*)	†			
			^{233}U (*α*,*p*2*n*)	†			
0·813	^{77}Br	57h	^{76}Se (*d*,*n*)	9·02			P^{77m}Se
			^{75}As (*α*,2*n*)	100			
			^{74}Se (*α*,*p*)	0·87			
0·815	^{140}La	40·22h	^{139}La (*n*,*γ*)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (*d*,*p*)	99·911			
			^{140}Ce (*n*,*p*)	88·48			
0·816	^{206}Bi	6·4d	^{205}Tl (*α*,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
0·817	^{110m}Ag	253d	^{109}Ag (*n*,*γ*)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (*d*,*p*)	48·65			
			^{110}Pd (*d*,2*n*)	11·8			

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0·818	^{82m}Rb	6·3h	^{79}Br (*α*,*n*)	50·52			
0·8197	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·820	^{166}Ho	> 30y					
0·82	^{161}Er	3·1h					P^{161}Ho
0·82	^{150}Pm	2·7h	^{150}Nd (*p*,*n*)	5·60			
			^{150}Nd (*d*,2*n*)	5·60			
0·82	^{168}Tm	85d	^{165}Ho (*α*,*n*)	100			
			^{168}Er (*p*,*n*)	27·07			
			^{169}Tm (*n*,2*n*)	100			
0·82	^{106}Rh	130m					
0·82	^{181}Re	20h					
0·82	^{246}Bk	1·8d				~40	
0·821	^{232}Pa	1·31d	^{231}Pa (*n*,*γ*)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (*α*,*p*3*n*)	100‡			
0·822	^{136}Cs	12·9d	^{135}Cs (*n*,*γ*)	†	13 ± 4*		
			^{139}La (*n*,*α*)	99·911			
0·823	^{100}Rh	20·8h	^{99}Ru (*d*,*n*)	12·7			D^{100}Pd
			^{100}Ru (*d*,2*n*)	12·7			
			^{100}Ru (*p*,*n*)	12·7			
0·825(?)	^{201}Pb	9·4h	^{203}Tl (*d*,4*n*)	29·50			P^{201}Tl
							D(62m) ^{201}Bi
							D (1·85h) ^{201}Bi
							D^{205}Po
0·825	^{202m}Pb	6·1s					D^{202}Bi
0·825	^{188}Ir	41·5h	^{187}Re (*α*,3*n*)	62·93			D^{188}Pt
			^{185}Re (*α*,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*p*,3*n*)	16·1			
0·8252	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·8276	^{82}Br	35·87h	^{81}Br (*n*,*γ*)	49·48	3·1 ± 0·5		
			^{81}Br (*d*,*p*)	49·48			
			^{82}Se (*d*,2*n*)	9·19			
			^{85}Rb (*n*,*α*)	72·15			

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0·828	^{188}Re	16·7h	^{187}Re (n,γ)	62·93	75 ± 15	0·33	D^{188}W
			^{187}Re (d,p)	62·93			
0·829	^{211}Pb (AcB)	36·1m					D^{215}Po(AcA) P^{211}Bi(AcC)
0·829	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg ($d,2n$)	23·13			
0·830	^{188}Ir	41·5h	^{187}Re ($\alpha,3n$)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os ($d,2n$)	13·3			
			^{189}Os ($d,3n$)	16·1			
0·83	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
0·83	^{66}Cu	5·10m	^{65}Cu (n,γ)	30·9	1·8 ± 0·4		D^{66}Ni
			^{65}Cu (d,p)	30·9			
			^{66}Zn (n,p)	27·81			
0·83	^{190}Re	2·8m					
0·83	^{47}Ca	4·7d	^{46}Ca (d,p)	0·0033		~5	P^{47}Sc
0·8334	^{79}Kr	34·5h	^{78}Kr (n,γ)	0·354	2·0 ± 0·5		
			^{76}Se (α,n)	9·02			
			^{79}Br ($d,2n$)	50·52			
			^{79}Br (p,n)	50·52			
			^{78}Kr (d,p)	0·354			
0·834	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
0·834	^{27}Mg	9·45m	^{26}Mg (n,γ)	11·29	27 ± 5mb		
0·835	^{54}V	55s					
0·835	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
0·837	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu ($n,2n$)	52·23			
0·838	^{95m}Tc	60d	^{95}Mo ($d,2n$)	15·70			
			^{95}Mo (p,n)	15·70			
			^{94}Mo (d,n)	9·12			
0·840	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		16	
			^{98}Mo (d,α)	23·75			
0·840	^{54}Mn	291d	^{56}Fe (d,α)	91·68			
			^{55}Mn ($n,2n$)	100			
			^{54}Cr (p,n)	2·38			

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0·84	^{117m}Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (d,p)	7·58			D^{117}Ag
0·84	^{243}Bk	4·5h	^{241}Am $(\alpha,2n)$	†			P^{243}Cm
			^{242}Cm (d,n)	†			
0·84	^{43}Sc	3·92h	^{43}Ca (p,n)	0·145		Weak	
			^{42}Ca (d,n)	0·64			
0·842	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·842	^{96}Tc	4·20d	^{96}Mo $(d,2n)$	16·50			
			^{96}Mo (p,n)	16·50			
			^{93}Nb (α,n)	100			
			^{95}Mo (d,n)	15·70			
0·844	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·845	^{56}Mn	2·576h	^{55}Mn (n,γ)	100	13·3 ± 0·2		
			^{55}Mn (d,p)	100			
			^{59}Co (n,α)	100			
			^{57}Fe (γ,p)	2·17			
0·845	^{56}Co	77·3d	^{56}Fe $(d,2n)$	91·68			D^{56}Ni
			^{58}Ni (γ,pn)	67·76			
			^{54}Fe (α,np)	5·84			
0·846	^{107}Cd	6·7h	^{106}Cd (n,γ)	1·22	1·0 ± 0·5		P^{107m}Ag
			^{107}Ag $(d,2n)$	51·35			
			^{107}Ag (p,n)	51·35			
0·8467	^{202}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
0·85	^{88}Kr	2·77h	^{87}Kr (n,γ)	†	< 600		P^{88}Rb D^{88}Br
0·85	^{87}Kr	78m	^{86}Kr (n,γ)	17·37	60 ± 20mb		D^{87}Br
			^{86}Kr (d,p)	17·37			
			^{87}Rb (n,p)	27·85			
0·85	^{101}Tc	14·0m	^{100}Mo (d,n)	9·62			D^{101}Mo
			^{102}Ru (γ,p)	31·5			
0·85	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		15	D^{60}Zn
			^{60}Ni $(d,2n)$	26·16			
			^{58}Ni (α,pn)	67·76			

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0·85	^{133}I	20·8h	^{235}U (*n*,*f*)		4·6%	5	Descendant ^{133m}Te P^{133}Xe P^{133m}Xe (2·4%) D^{133}Te
~0·85	^{240}Np	7·3m	^{239}Np (*n*,*γ*)	†	35 ± 10*	6	D^{240}U
0·852	^{183}Os	13·5h	^{185}Re (*p*,3*n*)	37·07			P^{183}Re
0·859	^{208}Tl (ThC″)	3·10m				15	D^{212}Bi(ThC)
0·86	^{126}I	13·3d	^{123}Sb (*α*,*n*)	42·75			
			^{125}Te (*d*,*n*)	6·99			
			^{126}Te (*p*,*n*)	18·71			
			^{127}I (*n*,2*n*)	100			
			^{127}I (*γ*,*n*)	100			
0·86	^{67}Ge	21m	^{70}Ge (*d*,*p*4*n*)	20·55			P^{67}Ga
0·86	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	11	P^{135m}Xe (30%) P^{135}Xe (70%) D^{135}Te
0·86	^{134}I	52·5m	^{235}U (*n*,*f*)		5·7%		D^{134}Te
0·861	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
0·861	^{143}Ce	33h	^{142}Ce (*n*,*γ*)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (*d*,*p*)	11·07			P^{143}Pr
			^{235}U (*n*,*f*)		5·4%		Descendant ^{143}Xe
0·862	^{135}La	19·5h	^{133}Cs (*α*,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
0·862	^{206}Po	8·8d	^{204}Pb (*α*,2*n*)	1·40			P^{206}Bi D^{210}Rn D^{206}At
0·865	^{211}Rn	16h	^{209}Bi (*α*,2*n*)	100			P^{211}At P^{207}Po
0·868	^{232}Pa	1·31d	^{231}Pa (*n*,*γ*)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (*α*,*p*3*n*)	100‡			

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0·870	^{69}Ge	40·4h	^{69}Ga (*d*,2*n*)	60·2			D^{69}As
			^{69}Ga (*p*,*n*)	60·2			
			^{66}Zn (α,*n*)	27·81			
0·870	^{207}Tl (AcC″)	4·79m	^{207}Pb (*n*,*p*)	21·7		~0·5	D^{211}Bi(AcC)
			^{208}Pb (γ,*p*)	52·3			
0·87	^{142}La	77m		–			D^{142}Ba
0·87	^{106}Rh	30s					D^{106}Ru
0·87	^{77}Kr	1·1h	^{74}Se (α,*n*)	0·87			
0·87	^{94}Nb	1·8 × 10^{4}y	^{93}Nb (*n*,γ)	100		92	
0·87	^{138}Cs	32·2m	^{138}Ba (*n*,*p*)	71·66		4	D^{138}Xe
			^{137}Cs (*n*,γ)	†	< 2		Descendant ^{138}I
0·87	^{136}I	86s	^{235}U (*n*,*f*)		3·1%		
0·871(?)	^{238}Np	2·10d	^{237}Np (*n*,γ)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (α,*p*3*n*)	99·276‡			
0·871	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
0·872	^{59}Cu	81·5s	^{58}Ni (*p*,γ)	67·76			
0·872	^{185}Os	93·6d	^{184}Os (*n*,γ)	0·018	< 200		
			^{185}Re (*p*,*n*)	37·07			
			^{185}Re (*d*,2*n*)	37·07			
0·872	^{152}Eu	12·7y					
0·873	^{160m}Ho	5·0h					D^{160}Er
0·874	^{94}Tc	53m	^{94}Mo (*p*,*n*)	9·12			D^{94}Ru
			^{94}Mo (*d*,2*n*)	9·12			
0·875	^{238}Pu	86·4y	^{238}U (*d*,2*n*)	99·276‡		~2 × 10^{-5}	D^{238}Np
			^{238}U (α,4*n*)	99·276‡			D^{242}Cm
			^{235}U (α,*n*)	0·720‡			
0·875	^{154}Eu	16y	^{153}Eu (*n*,γ)	52·23	420 ± 100*	13	
			^{153}Eu (*d*,*p*)	52·23			
0·877	^{234}Pa (UX$_2$)	6·66h	^{233}Pa(*n*,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$) D^{234}Th(UX$_1$) (0·63%)
0·878	^{24}Ne	3·38m					P^{24m}Na P^{24}Na
0·879	^{193m}Hg	10·0h	^{197}Au(*p*,5*n*)	100			P^{193}Hg P^{193m}Au

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0·879	^{185}Os	93·6d	^{184}Os (n,γ)	0·018	< 200		
			^{185}Re (p,n)	37·07			
			^{185}Re $(d,2n)$	37·07			
0·880	^{160m}Ho	5·0h					D^{160}Er
0·880	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 22		
			^{160}Gd $(d,2n)$	21·9			
0·880	^{67}Ga	77·9h	^{66}Zn (d,n)	27·81			D^{67}Ge
			^{67}Zn (p,n)	4·11			
0·88	^{110}Ag	24·2s	^{110}Cd (n,p)	12·39		Weak	D^{110m}Ag
0·88	^{84}Br	6·0m				70	
0·88	^{74}Ga	7·8m				Weak	
0·88	^{62}Cu	9·73m	^{60}Ni (α,pn)	26·16			D^{62}Zn
			^{63}Cu $(n,2n)$	69·1			
			^{63}Cu (γ,p)	69·1			
0·88	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
0·88	^{84}Rb	33·0d	^{81}Br (α,n)	49·48			
			^{85}Rb $(n,2n)$	72·15			
			^{86}Sr (d,α)	9·86			
0·88	^{195}Ir	2·3h	^{196}Pt (γ,p)	25·2			D^{195}Os
			^{195}Pt (n,p)	33·8			
0·88	^{180}Re	2·4m					
0·88	^{211}Po (AcC′)	0·52s					D^{211}Bi(AcC)
							D^{211}At
							D^{215}Rn
0·88	^{108m}In	55m	^{108}Cd $(d,2n)$	0·88			D^{108}Sn
0·881	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·884	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
0·885	^{238}Np	2·10d	^{237}Np (n,γ)	†	169 ± 6		P^{238}Pu
			^{237}Np (d,p)	†			D^{242}Am
			^{238}U $(d,2n)$	99·276‡			
			^{238}U $(\alpha,p3n)$	99·276‡			
0·885	^{110m}In	5·0h	^{109}Ag $(\alpha,3n)$	48·65			
0·885	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir $(n,2n)$	61·5			
			^{192}Os $(d,2n)$	41·0			
			^{194}Pt (γ,pn)	32·9			
0·885	^{46}Sc	83·9d	^{45}Sc (d,p)	100			
			^{46}Ti (n,p)	7·99			

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0·888	^{183}Os	13·5h	^{185}Re $(p,3n)$	37·07			P^{183}Re
0·890	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
0·890	^{183}Os	13·5h	^{185}Re $(p,3n)$	37·07			P^{183}Re
0·89	^{100}Tc	15·8s	^{100}Mo (p,n)	9·62			
0·89	^{160}Ho	28m	^{159}Tb $(\alpha,3n)$	100			
0·89	^{145}Eu	5d	^{147}Sm $(p,3n)$	15·07			D^{149}Tb
0·89	^{99}Rh	4·7h	^{99}Ru (p,n)	12·7			D^{99}Pd
			^{98}Ru (d,n)	1·91			
0·89	^{84m}Rb	23m	^{81}Br (α,n)	49·48			
			^{85}Rb $(n,2n)$	72·15			
0·89	^{184}Ta	8·7h	^{184}W (n,p)	30·6			
0·89	^{207}Bi	8·0y	^{208}Pb $(d,3n)$	52·3			D^{211}At
							P^{207m}Pb
0·89	^{109}Sn	18·1m					Ancestor
							^{109}In
							P^{109m}In
0·892	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
0·894	^{72}Ga	14·3d	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn $-\ \beta^-$				
0·895	^{223}Th	22·12m	^{232}Th (n,γ)	100‡	7·33 ± 0·12	0·14	P^{233}Pa
			^{232}Th (d,p)	100‡			
0·895	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
0·895	^{181}Re	20h					
0·895	^{184}Re	50d	^{181}Ta (α,n)	99·9877		15	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (p,n)	14·4			
			^{185}Re $(n,2n)$	37·07			
0·896	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·899	^{204m}Pb	66·9m	^{203}Tl (d,n)	29·50			D^{204}Bi
			^{205}Tl $(d,3n)$	70·50			
			^{204}Pb (n,n)	1·40			
0·8992	^{204}Bi	11·6h	^{204}Pb $(d,2n)$	1·40			P^{204m}Pb
			^{203}Tl $(\alpha,3n)$	29·50			D^{204}Po
0·900	^{147}Gd	29h					P^{147}Eu

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0·90	^{90}Nb	14·60h	^{90}Zr $(d,2n)$	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
0·90	^{92}Nb	10·1d	^{89}Y (α,n)	100			
			^{92}Zr (p,n)	17·11			
			^{93}Nb (γ,n)	100			
			^{94}Mo (d,α)	9·12			
			^{92}Mo (n,p)	15·86			
0·90	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge $(d,2n)$	27·37			
			^{74}Se (d,α)	0·87			
0·90	^{116}Sb	16m					
0·90	^{120}Sb	9h					D^{120}Sn
0·90	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
0·90	^{71}Zn	2·2m	^{74}Ge (n,α)	36·74		Weak	
0·90	^{244}Bk	4·4h	^{241}Am (α,n)	†			P^{244}Cm
0·9(?)	^{126}Ba	97m				Weak	P^{126}Cs
~0·9	^{250}Bk	3·13h	^{249}Bk (n,γ)	†	500 ± 200*		P^{250}Cf D (480d)^{254}E
0·904	^{184}Re	50d	^{181}Ta (α,n)	99·9877		45	
			^{182}W (α,pn)	26·4			
			^{184}W (p,n)	30·6			
			^{183}W (d,n)	14·4			
			^{185}Re $(n,2n)$	37·07			
0·905	^{234}Np	4·40d	^{235}U $(d,3n)$	0·720‡			D^{234}Pu
			^{235}U $(\alpha,p4n)$	0·720‡			
			^{235}U $(p,2n)$	0·720‡			
			^{233}U (d,n)	†			
			^{233}U $(\alpha,p2n)$	†			
0·907	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
0·907	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl D (62m)^{201}Bi D(1·85h) ^{201}Bi D^{205}Po

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0·908	^{88}Y	104d	^{88}Sr (*d*,2*n*)	82·56			D^{88}Zr
			^{88}Sr (*p*,*n*)	82·56			
			^{89}Y (*n*,2*n*)	100			
0·908	^{88}Rb	17·8m	^{87}Rb (*n*,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (*d*,*p*)	27·85			
			^{88}Sr (*n*,*p*)	82·56			
0·91	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}7\times10^{-3}$%		
0·91	^{65}Ga	15·2m	^{64}Zn (*d*,*n*)	48·89			P^{65}Zn
			^{64}Zn (*p*,γ)	48·89			
0·91	^{209}Po	103y	^{209}Bi (*d*,2*n*)	100		~0·5	D^{209}At
0·911	^{205}Bi	14·5d				3·3	D^{205}Po
							D^{209}At
							P^{205}Pb
0·9117	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·912	^{204m}Pb	66·9m	^{204}Pb (*n*,*n*)	1·40			D^{204}Bi
			^{203}Tl (*d*,*n*)	29·50			
			^{205}Tl (*d*,3*n*)	70·50			
0·912	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·913	^{89m}Y	16·1s					D^{89}Zr
							D^{89}Sr
0·913	^{89}Zr	79·3h	^{90}Zr (*n*,2*n*)	51·46			P^{89m}Y
			^{89}Y (*d*,2*n*)	100			D^{89}Nb
			^{89}Y (*p*,*n*)	100			
			^{92}Mo (*n*,α)	15·86			
0·913	^{89}Sr	50·5d	^{88}Sr (*n*,γ)	82·56	5 ± 1mb		D^{89}Rb
			^{88}Sr (*d*,*p*)	82·56			P^{89m}Y
							(0·02%)
			^{89}Y (*n*,*p*)	100			
0·914	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
0·914	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
0·914(?)	^{187}Ir	13h	^{185}Re (α,2*n*)	37·07			
			^{188}Os (*d*,3*n*)	13·3			
0·918	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po
0·92	^{208}Bi	~3 × 10^{4}y	^{208}Pb (*d*,2*n*)	52·3			

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0·92	^{240}Np	60m	^{239}Np (*n*,*γ*)	†	25 ± 15*		
0·923(?)	^{186}Ir	15h					D^{186}Pt
0·924	^{234}Pa	6·66h	^{233}Pa (*n*,*γ*)	†	25 ± 4		P^{234}U(U$_{II}$)
	(UX$_2$)						
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$)
							(0·63%)
0·925	^{238}Np	2·10d	^{237}Np (*n*,*γ*)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (*α*,*p*3*n*)	99·276‡			
0·927	^{182}Ta	115·1d	^{181}Ta (*n*,*γ*)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
0·928	^{51}Ti	5·79m	^{50}Ti (*n*,*γ*)	5·25	0·14 ± 0·03		
			^{50}Ti (*d*,*p*)	5·25			
			^{51}V (*n*,*p*)	99·75			
0·93	^{92}Nb	10·1d	^{89}Y (*α*,*n*)	100			
			^{92}Zr (*p*,*n*)	17·11			
			^{93}Nb (*γ*,*n*)	100			
			^{94}Mo (*d*,*α*)	9·12			
			^{92}Mo (*n*,*p*)	15·86			
0·93	^{91}Sr	9·67h	^{90}Sr (*n*,*γ*)	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (*n*,*α*)	17·40			P^{91}Y
			^{235}U (*n*,*f*)		5·0%		D(1·7m)^{91}Rb
							D(14m)^{91}Rb
0·931	^{178}Ta	9·35m	^{178}Hf (*p*,*n*)	27·1			D^{178}W
0·931	^{188}Re	16·7h	^{187}Re (*n*,*γ*)	62·93	75 ± 15	0·41	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
0·932	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
0·932	^{95}Tc	20·0h	^{92}Mo (*α*,*p*)	15·86		~5	
			^{95}Mo (*p*,*n*)	15·70			
			^{95}Mo (*d*,2*n*)	15·70			
0·933	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
0·935	^{214}Bi(RaC)	19·7m					D^{214}Pb(RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl
							(RaC″)

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0·935	$^{110m}\mathrm{In}$	5·0h	$^{109}\mathrm{Ag}\ (\alpha,3n)$	48·65			
0·935	$^{55}\mathrm{Co}$	18·2h	$^{54}\mathrm{Fe}\ (d,n)$	5·84			P^{55}Fe
			$^{54}\mathrm{Fe}\ (p,\gamma)$	5·84			
0·937	$^{194}\mathrm{Ir}$	19·0h	$^{193}\mathrm{Ir}\ (n,\gamma)$	61·5	130 ± 30		D^{194}Os
			$^{193}\mathrm{Ir}\ (d,p)$	61·5			
			$^{195}\mathrm{Pt}\ (\gamma,p)$	33·8			
			$^{196}\mathrm{Pt}\ (\gamma,pn)$	25·2			
0·937	$^{110m}\mathrm{Ag}$	253d	$^{109}\mathrm{Ag}\ (n,\gamma)$	48·65	3·2 ± 0·4		P^{110}Ag
			$^{109}\mathrm{Ag}\ (d,p)$	48·65			
			$^{110}\mathrm{Pd}\ (d,2n)$	11·8			
0·940	$^{238}\mathrm{Np}$	2·10d	$^{237}\mathrm{Np}\ (n,\gamma)$	†	169 ± 6		P^{238}Pu
			$^{237}\mathrm{Np}\ (d,p)$	†			D^{242}Am
			$^{238}\mathrm{U}\ (d,2n)$	99·276‡			
			$^{238}\mathrm{U}\ (\alpha,p3n)$	99·276‡			
0·94	$^{106}\mathrm{Rh}$	130m					
0·94	$^{93}\mathrm{Y}$	10·4h					D^{93}Sr
0·94	$^{92}\mathrm{Y}$	3·60h	$^{92}\mathrm{Zr}\ (n,p)$	17·11			D^{92}Sr
			$^{94}\mathrm{Zr}\ (d,\alpha)$	17·40			
0·94	$^{101}\mathrm{Tc}$	14·0m	$^{100}\mathrm{Mo}\ (d,n)$	9·62			D^{101}Mo
			$^{102}\mathrm{Ru}\ (\gamma,p)$	31·5			
0·94	$^{61}\mathrm{Cu}$	3·32h	$^{60}\mathrm{Ni}\ (d,n)$	26·16		1·5	D^{61}Zn
			$^{61}\mathrm{Ni}\ (p,n)$	1·25			
			$^{60}\mathrm{Ni}\ (p,\gamma)$	26·16			
			$^{63}\mathrm{Cu}\ (\gamma,2n)$	69·1			
0·94	$^{52}\mathrm{Mn}$	5·60d	$^{52}\mathrm{Cr}\ (p,n)$	83·76			
			$^{52}\mathrm{Cr}\ (d,2n)$	83·76			
			$^{54}\mathrm{Fe}\ (d,\alpha)$	5·84			
0·94	$^{115m}\mathrm{Cd}$	43d	$^{114}\mathrm{Cd}\ (n,\gamma)$	28·86	0·14 ± 0·03		D^{115}Ag(9%)
			$^{116}\mathrm{Cd}\ (\gamma,n)$	7·58			
			$^{114}\mathrm{Cd}\ (d,p)$	28·86			
			$^{235}\mathrm{U}\ (n,f)$		8×10^{-4}%		
0·94	$^{186}\mathrm{Ta}$	10·5m					
0·94	$^{194}\mathrm{Au}$	39·5h	$^{193}\mathrm{Ir}\ (\alpha,3n)$	61·5			D^{194}Hg
			$^{194}\mathrm{Pt}\ (d,2n)$	32·9			
			$^{195}\mathrm{Pt}\ (d,3n)$	33·8			
			$^{194}\mathrm{Pt}\ (p,n)$	32·9			
0·94	$^{110}\mathrm{Ag}$	24·2s	$^{110}\mathrm{Cd}\ (n,p)$	12·39			D^{110m}Ag
0·94	$^{149}\mathrm{Gd}$	9·3d	$^{147}\mathrm{Sm}\ (\alpha,2n)$	15·07			
			$^{151}\mathrm{Eu}\ (p,3n)$	47·77			
0·943	$^{238}\mathrm{Np}$	2·10d	$^{237}\mathrm{Np}\ (n,\gamma)$	†	169 ± 6		P^{238}Pu
			$^{237}\mathrm{Np}\ (d,p)$	†			D^{242}Am
			$^{238}\mathrm{U}\ (d,2n)$	99·276‡			
			$^{238}\mathrm{U}\ (\alpha,p3n)$	99·276‡			
0·946	$^{201}\mathrm{Pb}$	9·4h	$^{203}\mathrm{Tl}\ (d,4n)$	29·50			P^{201}Tl

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							D (62m)^{201}Bi D(1·85h)^{201}Bi D^{206}Po
0·947	^{211}Rn	16h	^{209}Bi (*α*,2*n*)	100			P^{211}At P^{207}Po
0·948	^{207}Po	5·7h	^{206}Pb (*α*,3*n*)	25·1			D^{211}Rn D^{207}At
0·95	^{131}Te	24·8m	^{130}Te (*n*,*γ*)	34·49	0·22 ± 0·05		D^{131}Sb P^{131}I D^{131m}Te
			^{130}Te (*d*,*p*)	34·49			
0·95	^{116}Sb	60m	^{115}In (*α*,3*n*)	95·77			
0·95	^{195}Hg	9·5h	^{197}Au (*p*,3*n*)	100			D^{195m}Hg D^{195}Tl
0·95	^{82}Sr	25·5d					D^{82}Y P^{82}Rb
0·95	^{28}Mg	21·2h	^{30}Si (*γ*,2*p*)	3·12			P^{28}Al
0·95	^{143}Pm	270d					
0·953	^{230}Pa	17·7d	^{232}Th (*d*,4*n*)	100‡			P^{230}U P^{230}Th(Io) P^{226}Ac
			^{232}Th (*α*,*p*5*n*)	100‡			
			^{230}Th (*d*,2*n*)	‡			
			^{231}Pa (*d*,*p*2*n*)	‡			
0·954	^{181}Re	20h					
0·960	^{63}Zn	38·3m	^{63}Cu (*d*,2*n*)	69·1		~8	
			^{63}Cu (*p*,*n*)	69·1			
			^{64}Zn (*γ*,*n*)	48·89			
			^{64}Zn (*n*,2*n*)	48·89			
0·960	^{182}Ta	115·1d	^{181}Ta (*n*,*γ*)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
0·96	^{76}Br	17·2h	^{76}Se (*p*,*n*)	9·02			D^{76}Kr
			^{75}As (*α*,3*n*)	100			
0·96	^{56}Ni	6·4d	^{54}Fe (*α*,2*n*)	5·84			P^{56}Co
0·96	^{132}I	2·26h	^{131}I (*n*,*γ*)	†	50 ± 40		D^{132}Te
0·96	^{199}Pt	31m	^{198}Pt (*n*,*γ*)	7·19	3·9 ± 0·8		
			^{198}Pt (*d*,*p*)	7·19			
			^{202}Hg (*n*,*α*)	29·80			
0·96	^{177}Ta	53h	^{175}Lu (*α*,2*n*)	97·40			D^{177}W
			^{176}Lu (*α*,3*n*)	2·60			
			^{177}Hf (*p*,*n*)	18·56			
0·96(?)	^{150}Pm	2·7h	^{150}Nd (*p*,*n*)	5·60			
			^{150}Nd (*d*,2*n*)	5·60			
0·96	^{243}Bk	4·5h	^{241}Am (*α*,2*n*)	†			P^{243}Cm
			^{242}Cm (*d*,*n*)	†			
0·961	^{202m}Pb	3·62h					

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0·961	^{202}Bi	95m					D^{202}Po
0·961	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu $(n,2n)$	52·23			
0·963	^{160m}Ho	5·0h					D^{160}Er
0·965	^{228}Ac	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra
	(MsTh$_2$)						(MsTh$_1$)
							P^{228}Th
							(RdTh)
0·967	^{160m}Ho	5·0h					D^{160}Er
0·968	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th
							(RdTh)
0·969	^{152}Eu	12·7y					
0·970	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
0·97	^{166}Ho	27·3h	^{165}Ho (n,γ)	100	60 ± 12		D^{166}Dy
0·97	^{160}Ho	28m	^{159}Tb $(\alpha,3n)$	100			
0·97	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 22		
			^{160}Gd $(d,2n)$	21·9			
0·973	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
0·979	^{187}Ir	13h	^{185}Re $(\alpha,2n)$	37·07			
			^{188}Os $(d,3n)$	13·3			
0·98	^{238}Am	1·9h	^{239}Pu $(d,3n)$	†			
0·98	^{128}Cs	3·8m					D^{128}Ba
0·98	^{25}Na	60s	^{25}Mg (n,p)	10·11			
			^{26}Mg (γ,p)	11·29			
0·98	^{56}Co	77·3d	^{56}Fe $(d,2n)$	91·68			D^{56}Ni
			^{58}Ni (γ,pn)	67·76			
			^{54}Fe (α,np)	5·84			
0·98	^{64}Ga	2·6m	^{64}Zn (p,n)	48·89			
			^{64}Zn $(d,2n)$	48·89			
0·981	^{206}Po	8·8d	^{204}Pb $(\alpha,2n)$	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
0·983	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu $(n,2n)$	52·23			

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
0·984	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (*α*,3*n*)	29·50			D^{204}Po
0·986	^{238}Np	2·10d	^{237}Np (*n*,*γ*)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (*α*,*p*3*n*)	99·276‡			
0·986	^{48}V	16·0d	^{45}Sc (*α*,*n*)	100			D^{48}Cr
			^{48}Ti (*p*,*n*)	73·99			
			^{47}Ti (*d*,*n*)	7·32			
0·986	^{48}Sc	44h	^{51}V (*n*,*α*)	99·75			
			^{48}Ti (*n*,*p*)	73·99			
			^{48}Ca (*p*,*n*)	0·185			
0·988	^{238}Np	2·10d	^{237}Np (*n*,*γ*)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (*α*,*p*3*n*)	99·276‡			
0·988	^{205}Bi	14·5d				14	D^{205}Po
							D^{209}At
							P^{205}Pb
0·99	^{54}V	55s					
0·99	^{128}I	24·99m	^{127}I (*n*,*γ*)	100	5·6 ± 0·3	0·3	
			^{128}Te (*d*,2*n*)	31·79			
			^{128}Te (*p*,*n*)	31·79			
0·993	^{207}Po	5·7h	^{206}Pb (*α*,3*n*)	25·1			D^{211}Rn
							D^{207}At
0·996(?)	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,*α*)	15·86			
			^{92}Mo (*γ*,*pn*)	15·86			
0·997	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
0·998	^{154}Eu	16y	^{153}Eu (*n*,*γ*)	52·23	420 ± 100*	14	
			^{153}Eu (*d*,*p*)	52·23			
1·00	^{77}Br	57h	^{76}Se (*d*,*n*)	9·02			P^{77m}Se
			^{75}As (*α*,2*n*)	100			
			^{74}Se (*α*,*p*)	0·87			
1·00	^{53}V	2·0m	^{54}Cr (*γ*,*p*)	2·38		Strong	
1·00	^{240}Np	60m	^{239}Np (*n*,*γ*)	†	25 ± 15*		
1·0	^{140}La	77m					D^{142}Ba
1·0	^{133}Te	2m	^{235}U (*n*,*f*)		4·5%		D^{133m}Te
							P^{133}I
~1·0	^{196}Ir	9·7d	^{196}Pt (*n*,*p*)	25·2			
>1·0	^{195}Ir	2·3h	^{196}Pt (*γ*,*p*)	25·2			D^{195}Os
			^{195}Pt (*n*,*p*)	33·8			

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1·0	^{169}Re	150d	^{188}Re (n,γ)	†	<2		
1·0	^{132}La	4·5h					D^{132}Ce
~1	^{120}In	~55s					
~1	^{171}Lu	~600d					
1·003	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·003	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·007	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*	17	
			^{153}Eu (d,p)	52·23			
1·008	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi
							D^{210}Rn
							D^{206}At
1·01	^{84}Rb	33·0d	^{81}Br (α,n)	49·48			
			^{85}Rb (n,2n)	72·15			
			^{86}Sr (d,α)	9·86			
1·01	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
1·01	^{100}Tc	15·8s	^{100}Mo (p,n)	9·62			
1·01	^{83}Se	70s	^{82}Se (n,γ)	9·19	50 ± 25mb		P^{83}Br
			^{235}U (n,f)		0·21%		
1·01	^{43}K	22·4h	^{40}Ar (α,p)	99·600			
1·01	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		25	D^{138}Xe
			^{137}Cs (n,γ)	†	<2		Descendant
							^{138}I
1·01	^{234}Np	4·40d	^{235}U (d,3n)	0·720‡			D^{234}Pu
			^{235}U (α,p4n)	0·720‡			
			^{235}U (p,2n)	0·720‡			
			^{233}U (d,n)	†			
			^{233}U (α,p2n)	†			
1·01	^{234m}Pa	1·175m	^{233}Pa (n,γ)	†	43 ± 5		D^{234}Th(UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
1·013	^{230}Pa	17·7d	^{232}Th (d,4n)	100‡			P^{230}U
			^{232}Th (α,p5n)	100‡			P^{230}Th(Io)
			^{230}Th (d,2n)	‡			P^{226}Ac
1·014	^{205}Bi	14·5d					P^{205}Pb
							D^{205}Po
							D^{209}At
1·015	^{27}Mg	9·45m	^{26}Mg (n,γ)	11·29	27 ± 5mb		
1·019	^{206}Bi	6·4d	^{205}Tl (α,3n)	70·50			D^{206}Po
			^{206}Pb (d,2n)	25·1			D^{210}At
			^{207}Pb (d,3n)	21·7			

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1·02	^{101}Mo	14·61m	^{100}Mo (*n*,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (*d*,*p*)	9·62			
1·02	^{97}Zr	17·0h	^{96}Zr (*n*,γ)	2·80	0·1 ± 0·05		P^{97m}Nb
			^{96}Zr (*d*,*p*)	2·80			Descendant ^{97}Kr
			^{100}Mo (*n*,α)	9·62			
			^{235}U (*n*,*f*)		6·2%		
1·02	^{82m}Rb	6·3h	^{79}Br (α,*n*)	50·52			
1·025	^{91}Sr	9·67h	^{90}Sr (*n*,γ)*	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (*n*,α)	17·40			P^{91}Y
			^{235}U (*n*,*f*)		5·0%		D(1·7m)^{91}Rb D(14m)^{91}Rb
1·027	^{238}Np	2·10d	^{237}Np (*n*,γ)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (α,*p*3*n*)	99·276‡			
1·030	^{238}Np	2·10d	^{237}Np (*n*,γ)	†	169 ± 6		P^{238}Pu
			^{237}Np (*d*,*p*)	†			D^{242}Am
			^{238}U (*d*,2*n*)	99·276‡			
			^{238}U (α,*p*3*n*)	99·276‡			
1·03	^{10}C	19·1s	^{10}B (*p*,*n*)	18·45		1·7	
~1·03	^{195m}Hg	40·0h	^{197}Au (*d*,4*n*)	100			P^{195m}Au
			^{197}Au (*p*,3*n*)	100			P^{195}Hg
1·03	^{56}Co	77·3d	^{56}Fe (*d*,2*n*)	91·68			D^{56}Ni
			^{58}Ni (γ,*pn*)	67·76			
			^{54}Fe (α,*np*)	5·84			
1·03	^{118}Sb	5·1h	^{115}In (α,*n*)	95·77			D^{118m}Sb(?)
			^{117}Sn (*d*,*n*)	7·57			
1·033	^{206}Po	8·8d	^{204}Pb (α,2*n*)	1·40			P^{206}Bi D^{210}Rn D^{206}At
1·034	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
1·035	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
1·036	^{183m}Os	10h					
1·038	^{134}Cs	2·07y	^{133}Cs (*n*,γ)	100	30 ± 1		
			^{133}Cs (*d*,*p*)	100			
			^{134}Xe (*d*,2*n*)	10·44			
			^{134}Xe (*p*,*n*)	10·44			

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1·040	^{46}Sc	44h	^{51}V (n,α)	99·75			
			^{48}Ti (n,p)	73·99			
			^{48}Ca (p,n)	0·185			
1·04	^{95m}Tc	60d	^{95}Mo $(d,2n)$	15·70			
			^{95}Mo (p,n)	15·70			
			^{94}Mo (d,n)	9·12			
1·04	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn $(d,2n)$	27·81			
			^{66}Zn (p,n)	27·81			
1·04	^{66}Cu	5·10m	^{65}Cu (n,γ)	30·9	1·8 ± 0·4		D^{66}Ni
			^{65}Cu (d,p)	30·9			
			^{66}Zn (n,p)	27·81			
1·04	^{135}I	6·68h	^{235}U (n,f)		5·6%	9	P^{135m}Xe (30%) P^{135}Xe (70%) D^{135}Te
1·04	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
1·04	^{120}Sb	5·8d	^{120}Sn $(d,2n)$	32·97			
			^{121}Sb $(d,p2n)$	57·25			
1·042	^{70}Ga	21·1m	^{69}Ga (n,γ)	60·2	1·4 ± 0·3		
			^{71}Ga $(n,2n)$	39·8			
			^{69}Ga (d,p)	60·2			
			^{72}Ge (γ,pn)	27·37			
1·044	^{205}Bi	14·5d				2·2	D^{205}Po D^{209}At P^{205}Pb
1·044	^{82}Br	35·87h	^{81}Br (n,γ)	49·48	3·1 ± 0·5		
			^{81}Br (d,p)	49·48			
			^{82}Se $(d,2n)$	9·19			
			^{85}Rb (n,α)	72·15			
1·045	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag $(n,2n)$	51·35			
1·045	^{106}Rh	30s					D^{106}Ru
1·047	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
1·048	^{160m}Ho	5·0h					D^{160}Er

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1·050	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn$^{-}\beta^{-}$				
1·05	^{108m}In	55m	^{108}Cd ($d,2n$)	0·88			D^{108}Sn
1·05	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
1·05	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr
							P^{89}Sr
1·05	^{138}Pr	2·0h	^{140}Ce ($p,3n$)	88·48			
1·06	^{246}Am	25·0m					P^{246}Cm
							D^{246}Pu
1·06	^{244}Bk	4·4h	^{241}Am (α,n)	†			P^{244}Cm
1·06	^{211m}Po	25s	^{208}Pb (α,n)	52·3			P^{207m}Pb
1·06	^{192}Ir	74·37d	^{191}Ir (n,γ)	38·5	700 ± 200		
			^{191}Ir (d,p)	38·5			
			^{193}Ir ($n,2n$)	61·5			
			^{192}Os ($d,2n$)	41·0			
			^{194}Pt (γ,pn)	32·9			
1·06	^{70}As	52m					D^{70}Se
1·064	^{207m}Pb	0·80s	^{207}Pb (n,n)	21·7			D^{207}Bi
							D^{211m}Po
1·064	^{207}Bi	8·0y	^{208}Pb ($d,3n$)	52·3			D^{211}At
							P^{207m}Pb
1·069	^{160m}Ho	5·0h					D^{160}Er
1·07	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
1·07	^{125}Sn	9·5m	^{124}Sn (n,γ)	5·98	0·2 ± 0·1	0·3	
			^{124}Sn (d,p)	5·98			
1·07	^{68}Ga	68m	^{68}Zn (p,n)	18·56			D^{68}Ge
			^{67}Zn (d,n)	4·11			
			^{65}Cu (α,n)	30·9			
			^{70}Ge (γ,pn)	20·55			
1·07	^{106}Rh	130m					
1·07	^{102}Rh	210d	^{101}Ru (d,n)	17·0			
			^{103}Rh ($n,2n$)	100			
			^{103}Rh (γ,n)	100			
1·07	^{177}Ta	53h	^{175}Lu ($\alpha,2n$)	97·40			D^{177}W
			^{176}Lu ($\alpha,3n$)	2·60			
			^{177}Hf (p,n)	18·56			

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1·071	^{95}Tc	20·0h	^{92}Mo (α,p)	15·86		~5	
			^{95}Mo (p,n)	15·70			
			^{95}Mo $(d,2n)$	15·70			
1·077	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
1·078	^{96}Nb	23·35h	^{96}Zr (p,n)	2·80		52	
			^{98}Mo (d,α)	23·75			
1·079	^{86}Rb	18·66d	^{87}Rb (γ,n)	27·85		~9	
1·08	^{132}Cs	6·2d	^{133}Cs $(n,2n)$	100			
			^{132}Xe $(d,2n)$	26·89			
			^{132}Xe (p,n)	26·89			
1·08	^{147}Gd	29h					P^{147}Eu
1·08	^{88}Y	14·6h	^{88}Sr $(p,3n)$	82·56			D^{88}Zr
1·085	^{232}Pa	1·31d	^{231}Pa (n,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (d,p)	‡			
			^{232}Th $(d,2n)$	100‡			
			^{232}Th $(\alpha,p3n)$	100‡			
1·085	^{116m}In	53·99m	^{115}In (n,γ)	95·77	155 ± 10	54	
			^{115}In (d,p)	95·77			
			^{116}Cd (p,n)	7·58			
1·089	^{198}Au	2·697d	^{197}Au (n,γ)	100	96 ± 10		
			^{197}Au (d,p)	100			
			^{198}Hg (n,p)	10·02			
			^{198}Pt (p,n)	10·02			
1·09	^{172}Tm	63·6h					D^{172}Er
1·09	^{71}Zn	2·2m	^{74}Ge (n,α)	36·74		Weak	
1·092	^{152}Eu	12·7y					
1·095	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (n,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
1·095	^{228}Pa	22h					D^{228}U P^{224}Ac P^{228}Th (RdTh)
1·098	^{59}Fe	45·1d	^{58}Fe (n,γ)	0·31	0·98 ± 0·10	57	
			^{59}Co (n,p)	100			
			^{58}Fe (d,p)	0·31			
1·099	^{201}Pb	9·4h	^{203}Tl $(d,4n)$	29·50			P^{201}Tl D(62m)^{201}Bi D(1·85h)^{201}Bi D^{205}Po

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1·099	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
1·10	^{152}Eu	12·7y					
1·10	^{143}Ce	33h	^{142}Ce (*n*,γ)	11·07	0·95 ± 0·05		D^{143}La
			^{142}Ce (*d*,*p*)	11·07			P^{143}Pr
			^{235}U (*n*,*f*)		5·4%		Descendant ^{143}Xe
1·10	^{159}Er	75m					
1·10	^{81}Rb	4·7h	^{79}Br (α,2*n*)	50·52			P^{81m}Kr
							D^{81}Sr
1·10	^{134}I	52·5m	^{235}U (*n*,*f*)		5·7%		D^{134}Te
1·10	^{112}Ag	3·20h	^{112}Cd (*n*,*p*)	24·07			D^{112}Pd
			^{113}Cd (γ,*p*)	12·26			
			^{115}In (*n*,α)	95·77			
1·1	^{74}Ga	7·8m				Weak	
1·1	^{165}Er	10·0h	^{164}Dy (α,3*n*)	28·18			D^{165}Tm
			^{165}Ho (*p*,*n*)	100			
			^{165}Ho (*d*,2*n*)	100			
~1·1(?)	^{138}Pr	70m					
~1·1	^{210}Tl (RaC″)	1·32m				Weak	D^{214}Bi (RaC)
							P^{210}Pb(RaD)
1·103	^{183m}Os	10h					
1·105	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}7\times10^{-3}$%		
1·108	^{100}Rh	20·8h	^{99}Ru (*d*,*n*)	12·7			D^{100}Pd
			^{100}Ru (*d*,2*n*)	12·7			
			^{100}Ru (*p*,*n*)	12·7			
1·109	^{183m}Os	10h					
1·11	^{95}Ru	1·65h	^{96}Ru (*n*,2*n*)	5·57			
			^{92}Mo (α,*n*)	15·86			
1·11	^{102}Rh	210d	^{101}Ru (*d*,*n*)	17·0			
			^{103}Rh (*n*,2*n*)	100			
			^{103}Rh (γ,*n*)	100			
1·113	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
1·118	^{152}Eu	12·7y					
1·119	^{65}Zn	245d	^{64}Zn (*n*,γ)	48·89	0·44 ± 0·05		D^{65}Ga
			^{64}Zn (*d*,*p*)	48·89			
			^{65}Cu (*p*,*n*)	30·9			
			^{65}Cu (*d*,2*n*)	30·9			

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1·119	^{96}Tc	4·20d	^{96}Mo $(d,2n)$	16·50			
			^{96}Mo (p,n)	16·50			
			^{93}Nb (α,n)	100			
			^{95}Mo (d,n)	15·70			
1·119	^{46}Sc	83·9d	^{45}Sc (d,p)	100			
			^{46}Ti (n,p)	7·99			
1·120	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl (RaC″)
1·12	^{26}Al	8×10^{5}y	^{23}Na (α,n)	100		3·7	
			^{26}Mg (p,n)	11·29			
			^{25}Mg (p,γ)	10·11			
			^{27}Al (γ,n)	100			
1·12	^{161}Er	3·1h					P^{161}Ho
1·12	^{69}Ge	40·4h	^{69}Ga $(d,2n)$	60·2			D^{69}As
			^{69}Ga (p,n)	60·2			
			^{66}Zn (α,n)	27·81			
1·12	^{194}Au	39·5h	^{193}Ir $(\alpha,3n)$	61·5			D^{194}Hg
			^{194}Pt $(d,2n)$	32·9			
			^{195}Pt $(d,3n)$	33·8			
			^{194}Pt (p,n)	32·9			
1·12	^{109}Sn	18·1m					P^{109m}In Ancestor ^{109}In
1·12	^{65}Ni	2·564h	^{64}Ni (n,γ)	1·16	1·6 ± 0·2		
			^{64}Ni (d,p)	1·16			
			^{65}Cu (n,p)	30·9			
			^{68}Zn (n,α)	18·56			
1·122	^{182}Re	12·7h	^{181}Ta $(\alpha,3n)$	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
1·122	^{182}Re	64·0h	^{181}Ta $(\alpha,3n)$	99·9877			
			^{182}W(p,n)	26·4			
			^{182}W $(d,2n)$	26·4			
1·122	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·13	^{211}Rn	16h	^{209}Bi $(\alpha,2n)$	100			P^{211}At P^{207}Po
1·13	^{44}K	22·0m	^{44}Ca (n,p)	2·06			

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1·13	^{62}Cu	9·73m	^{60}Ni (*α*,*pn*)	26·16			D^{62}Zn
			^{63}Cu (*n*,2*n*)	69·1			
			^{63}Cu (*γ*,*p*)	69·1			
1·131	^{106}Ag	8·2d	^{103}Rh (*α*,*n*)	100			
			^{105}Pd (*d*,*n*)	22·2			
			^{106}Pd (*p*,*n*)	27·3			
			^{107}Ag (*n*,2*n*)	51·35			
1·133	^{188}Re	16·7h	^{187}Re (*n*,*γ*)	62·93	75 ± 15	0·07	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
1·133	^{160m}Ho	5·0h					D^{160}Er
1·137	^{122}Sb	2·8d	^{121}Sb (*n*,*γ*)	57·25	6·8 ± 1·5	0·7	
			^{121}Sb (*d*,*p*)	57·25			
			^{122}Sn (*p*,*n*)	4·71			
			^{122}Sn (*d*,2*n*)	4·71			
1·138	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,*α*)	15·86			
			^{92}Mo (*γ*,*pn*)	15·86			
1·14	^{100}Tc	15·8s	^{100}Mo (*p*,*n*)	9·62			
1·14	^{151}Nd	15m					P^{151}Pm
1·14	^{141}Nd	2·42h	^{141}Pr (*p*,*n*)	100		0·5	
			^{141}Pr (*d*,2*n*)	100			
			^{142}Nd (*n*,2*n*)	27·13			
			^{142}Nd (*γ*,*n*)	27·13			
1·14	^{131}Te	24·8m	^{130}Te (*n*,*γ*)	34·49	0·22 ± 0·05		D^{131}Sb
			^{130}Te (*d*,*p*)	34·49			P^{131}I
							D^{131m}Te
1·14	^{129}Te	72m	^{128}Te (*n*,*γ*)	31·79	0·13 ± 0·03		D^{129m}Te
			^{128}Te (*d*,*p*)	31·79			D^{129}Sb
			^{130}Te (*n*,2*n*)	34·49			
			^{130}Te (*γ*,*n*)	34·49			
1·14	^{129m}Te	33·5d	^{128}Te (*n*,*γ*)	31·79	15 ± 5mb		P^{129}Te
			^{128}Te (*d*,*p*)	31·79			
			^{130}Te (*n*,2*n*)	34·49			
			^{235}U (*n*,*f*)		0·19%		
1·14	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	37	P^{135m}Xe (30%) P^{135}Xe(70%) D^{135}Te
1·149	^{194}Ir	19·0h	^{193}Ir (*n*,*γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (*γ*,*p*)	33·8			
			^{196}Pt (*γ*,*pn*)	25·2			

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1·149	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn
							D^{207}At
1·15	^{93}Y	10·4h					D^{93}Sr
1·15	^{97}Zr	17·0h	^{96}Zr (*n*,γ)	2·80	0·1 ± 0·05		P^{97m}Nb
			^{96}Zr (*d*,*p*)	2·80			Descendant ^{97}Kr
			^{100}Mo (*n*,α)	9·62			
			^{235}U (*n*,*f*)		6·2%		
1·15	^{195}Hg	9·5h	^{197}Au (*p*,3*n*)	100			D^{195m}Hg
							D^{195}Tl
1·15	^{61}Cu	3·32h	^{60}Ni (*d*,*n*)	26·16		1	D^{61}Zn
			^{61}Ni (*p*,*n*)	1·25			
			^{60}Ni (*p*,γ)	26·16			
			^{63}Cu (γ,2*n*)	69·1			
1·15	^{130}I	12·6h	^{129}I (*n*,γ)	†	11 ± 4		
			^{130}Te (*d*,2*n*)	34·49			
			^{130}Te (*p*,*n*)	34·49			
			^{133}Cs (*n*,α)	100			
1·153	^{232}Pa	1·31d	^{231}Pa (*n*,γ)	‡	200 ± 15		P^{232}U
			^{231}Pa (*d*,*p*)	‡			
			^{232}Th (*d*,2*n*)	100‡			
			^{232}Th (α,*p*3*n*)	100‡			
1·155	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
1·155	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
1·158	^{192}Au	4·7h	^{191}Ir (α,3*n*)	38·5			D^{192}Hg
			^{192}Pt (*d*,2*n*)	0·78			
1·158	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
1·159	^{44}Sc	3·92h	^{41}K (α,*n*)	6·91		~100	D^{44}Ti
			^{45}Sc (*n*,2*n*)	100			
			^{43}Ca (*d*,*n*)	0·145			
			^{44}Ca (*p*,*n*)	2·06			
1·16	^{244}Bk	4·4h	^{241}Am (α,*n*)	†			P^{244}Cm
1·16	^{240}Np	60m	^{239}Np (*n*,γ)	†	25 ± 15*		
1·16	^{132}I	2·26h	^{131}I (*n*,γ)	†	50 ± 40		D^{132}Te

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1·16	^{34m}Cl	32·40m	^{31}P (*α,n*)	100			P^{34}Cl
			^{34}S (*p,n*)	4·215			
			^{33}S (*d,n*)	0·750			
1·16	^{194}Au	39·5h	^{193}Ir (*α,3n*)	61·5			D^{194}Hg
			^{194}Pt (*d,2n*)	32·9			
			^{195}Pt (*d,3n*)	33·8			
			^{194}Pt (*p,n*)	32·9			
1·168	^{134}Cs	2·07y	^{133}Cs (*n,γ*)	100	30 ± 1		
			^{133}Cs (*d,p*)	100			
			^{134}Xe (*d,2n*)	10·44			
			^{134}Xe (*p,n*)	10·44			
1·17	^{150}Pm	2·7h	^{150}Nd (*p,n*)	5·60			
			^{150}Nd (*d,2n*)	5·60			
1·17	^{62}Co	13·9m	^{62}Ni (*n,p*)	3·66			
1·17	^{152}Eu	12·7y					
1·17	^{62}Cu	9·73m	^{60}Ni (*α,pn*)	26·16			D^{62}Zn
			^{63}Cu (*n,2n*)	69·1			
			^{63}Cu (*γ,p*)	69·1			
1·1728	^{60}Co	5·24y	^{59}Co (*n,γ*)	100	20 ± 3		
			^{59}Co (*d,p*)	100			
			^{63}Cu (*n,α*)	69·1			
1·175	^{193m}Hg	10·0h	^{197}Au (*p,5n*)	100			P^{193}Hg P^{193m}Au
1·180	^{160m}Ho	5·0h					D^{160}Er
1·180	^{194}Ir	19·0h	^{193}Ir (*n,γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d,p*)	61·5			
			^{195}Pt (*γ,p*)	33·8			
			^{196}Pt (*γ,pn*)	25·2			
1·18	^{120}Sb	5·8d	^{120}Sn (*d,2n*)	32·97			
			^{121}Sb (*d,p2n*)	57·25			
1·18	^{120}Sb	16·4m	^{119}Sn (*d,n*)	8·58			
			^{120}Sn (*p,n*)	32·97			
			^{120}Sn (*d,2n*)	32·97			
			^{121}Sb (*n,2n*)	57·25			
1·18	^{184}Ta	8·7h	^{184}W (*n,p*)	30·6			
1·18	^{101}Mo	14·61m	^{100}Mo (*n,γ*)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (*d,p*)	9·62			
1·18	^{160}Tb	72·3d	^{159}Tb (*n,γ*)	100	> 22		
			^{160}Gd (*d,2n*)	21·9			
1·184	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At

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1·185	^{210}At	8·3h	^{209}Bi (α,3*n*)	100			P^{210}Po
							P^{208}Bi
1·187	^{96}Nb	23·35h	^{96}Zr (*p*,*n*)	2·80		32	
			^{98}Mo (*d*,α)	23·75			
1·189	^{182}Re	12·7h	^{181}Ta (α,3*n*)	99·9877			D^{182}Os
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
1·189	^{182}Re	64·0h	^{181}Ta (α,3*n*)	99·9877			
			^{182}W (*p*,*n*)	26·4			
			^{182}W (*d*,2*n*)	26·4			
1·189	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
1·190	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·19	^{234}Np	4·40d	^{235}U (*d*,3*n*)	0·720‡			D^{234}Pu
			^{235}U (α,*p*4*n*)	0·720‡			
			^{235}U (*p*,2*n*)	0·720‡			
			^{233}U (*d*,*n*)	†			
			^{233}U (α,*p*2*n*)	†			
1·19	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		$3·7 \times 10^{-3}$%		
1·19	^{91}Y	57·5d	^{90}Y (*n*,γ)	†	< 7	0·22	D^{91}Sr
			^{91}Zr (*n*,*p*)	11·23			
			^{235}U (*n*,*f*)		5·9%		
1·19	^{35}Ar	1·83s	^{32}S (α,*n*)	95·018			
			^{35}Cl (*p*.*n*)	75·53			
1·19	^{101}Pd	8·5h					P (4·7d) ^{101}Rh
1·20	^{132}Cs	6·2d	^{133}Cs (*n*,2*n*)	100			
			^{132}Xe (*d*,2*n*)	26·89			
			^{132}Xe (*p*,*n*)	26·89			
1·2	^{177}W	130m					P^{177}Ta
							D^{177}Re
1·2	^{76}Br	17·2h	^{76}Se (*p*,*n*)	9·02			D^{76}Kr
			^{75}As (α,3*n*)	100			
~1·2 (?)	^{186}Ta	10·5m					
1·201	^{160m}Ho	5·0h					D^{160}Er
1·203	^{204}Bi	11·6h	^{204}Pb (*d*,2*n*)	1·40			P^{204m}Pb
			^{203}Tl (α,3*n*)	29·50			D^{204}Po

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1·205	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag (n,2n)	51·35			
1·207	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg (d,2n)	23·13			
1·210	^{76}As	26·4h	^{75}As (n,γ)	100	5·4 ± 1·0		
			^{75}As (d,p)	100			
			^{79}Br (n,α)	50·52			
			^{77}Se (γ,p)	7·58			
1·21	^{91m}Mo	66s	^{92}Mo (γ,n)	15·86			
1·21	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
1·211	^{204}Bi	11·6h	^{204}Pb (d,2n)	1·40			P^{204m}Pb
			^{203}Tl (α,3n)	29·50			D^{204}Po
1·212	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn D^{207}At
1·212	^{188}Ir	41·5h	^{187}Re (α,3n)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os (d,2n)	13·3			
			^{189}Os(d,3n)	16·1			
1·215	^{70}Ga	21·1m	^{69}Ga (n,γ)	60·2	1·4 ± 0·3		
			^{71}Ga (n,2n)	39·8			
			^{69}Ga (d,p)	60·2			
			^{73}Ge (γ,pn)	27·37			
1·216	^{194}Ir	19·0h	^{193}Ir (n,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (d,p)	61·5			
			^{195}Pt (γ,p)	33·8			
			^{196}Pt (γ,pn)	25·2			
1·22	^{118}Sb	5·1h	^{115}In (α,n)	95·77			D^{118m}Sb(?)
			^{117}Sn (d,n)	7·57			
1·22	^{56}Co	77·3d	^{56}Fe (d,2n)	91·68			D^{56}Ni
			^{58}Ni (γ,pn)	67·76			
			^{54}Fe (α,np)	5·84			
1·22	^{61}Cu	3·32h	^{60}Ni (d,n)	26·16		5	D^{61}Zn
			^{61}Ni (p,n)	1·25			
			^{60}Ni (p,γ)	26·16			
			^{63}Cu (γ,2n)	69·1			
1·222	^{182}Re	12·7h	^{181}Ta (α,3n)	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			
1·222	^{182}Re	64·0h	^{181}Ta (α,3n)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W (d,2n)	26·4			

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1·222	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·225	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag ($n,2n$)	51·35			
1·227	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg ($d,2n$)	23·13			
1·23	^{244}Bk	4·4h	^{241}Am (α,n)	†			P^{244}Cm
1·23	^{194}Au	39·5h	^{193}Ir ($\alpha,3n$)	61·5			D^{194}Hg
			^{194}Pt ($d,2n$)	32·9			
			^{195}Pt ($d,3n$)	33·8			
			^{194}Pt (p,n)	32·9			
1·23	^{200}Au	48m	^{199}Au (n,γ)	†	30 ± 15*	24	D^{200}Pt
			^{200}Hg (n,p)	23·13			
			^{203}Tl (n,α)	29·5			
1·23	^{106}Rh	130m					
1·231	^{182}Re	12·7h	^{181}Ta ($\alpha,3n$)	99·9877			D^{182}Os
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
1·231	^{182}Re	64·0h	^{181}Ta ($\alpha,3n$)	99·9877			
			^{182}W (p,n)	26·4			
			^{182}W ($d,2n$)	26·4			
1·231	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·238	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
1·24	^{234m}Pa	1·175m	^{233}Pa (n,γ)	†	43 ± 5		D^{234}Th(UX$_1$) P^{234}U(U$_{II}$) P^{234}Pa(UZ)
1·24	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$) D^{234}Pa(UX$_2$) D^{234}Th(UX$_1$) (0·63%)
1·24	^{68}Ga	68m	^{66}Zn (p,n)	18·56			D^{68}Ge
			^{67}Zn (d,n)	4·11			
			^{65}Cu (α,n)	30·9			
			^{70}Ge (γ,pn)	20·55			

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1·24	^{104}Rh	44s	^{103}Rh (n,γ)	100	140 ± 30		D^{104m}Rh
1·24(?)	^{150}Pm	2·7h	^{160}Nd (p,n)	5·60			
			^{150}Nd ($d,2n$)	5·60			
1·243	^{193m}Hg	10·0h	^{197}Au ($p,5n$)	100			P^{193}Hg P^{193m}Au
1·25	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
1·25	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
1·25	^{74}As	17·5d	^{71}Ga (α,n)	39·8			
			^{73}Ge (d,n)	7·67			
			^{74}Ge (p,n)	36·74			
			^{75}As ($n,2n$)	100			
1·256	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
1·258	^{122}Sb	2·8d	^{121}Sb (n,γ)	57·25	6·8 ± 1·5	0·7	
			^{121}Sb (d,p)	57·25			
			^{122}Sn (p,n)	4·71			
			^{122}Sn ($d,2n$)	4·71			
1·26	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr P^{89}Sr
1·26	^{31}Si	2·62h	^{30}Si (n,γ)	3·12	110 ± 10mb	0·07	
			^{30}Si (d,p)	3·12			
			^{31}P (n,p)	100			
1·26	^{99}Rh	4·7h	^{99}Ru (p,n)	12·7			D^{99}Pd
			^{98}Ru (d,n)	1·91			
1·264	^{160m}Ho	5·0h					D^{160}Er
1·27	^{117m}Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (d,p)	7·58			D^{117}Ag
1·27	^{38}Cl	55·5m	^{40}Ar (γ,p)	99·600			
1·27	^{194}Au	39·5h	^{193}Ir ($\alpha,3n$)	61·5			D^{194}Hg
			^{194}Pt ($d,2n$)	32·9			
			^{195}Pt ($d,3n$)	33·8			
			^{194}Pt (p,n)	32·9			
1·27	^{160}Tb	72·3d	^{159}Tb (n,γ)	100	> 22		
			^{160}Gd ($d,2n$)	21·9			
1·273	^{160m}Ho	5·0h					D^{160}Er

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γ-Energy (Mev)	Nuclide	Half-Life	Some Modes of Formation	Per Cent Abundance of Relevant Stable Isotope	Thermal Neutron Activation Cross Section (Barns) or Fission Yield	Per Cent Abundance of γ-Radiation	Radioactive Parent or Daughter of
1·274	^{116m}In	53·99m	^{115}In (n,γ)	95·77	155 ± 10	75	
			^{115}In (d,p)	95·77			
			^{116}Cd (p,n)	7·58			
1·277	^{22}Na	2·58y	^{24}Mg (d,α)	78·6			
			^{19}F (α,n)	100			
			^{21}Ne (p,γ)	0·257			
			^{23}Na $(n,2n)$	100			
1·277	^{154}Eu	16y	^{153}Eu (n,γ)	52·23	420 ± 100*	42	
			^{153}Eu (d,p)	52·23			
1·28	^{135}I	6·68h	^{235}U (n,f)		5·6%	34	P^{135m}Xe (30%) P^{135}Xe(70%) D^{135}Te
1·28	^{29}P	4·45s	^{29}Si (p,n)	4·71		0·8	
1·28	^{29}Al	6·56m	^{26}Mg (α,p)	11·29		85	
1·28	^{101}Pd	8·5h					P (4·7d) ^{101}Rh
1·281	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
1·285	^{160m}Ho	5·0h					D^{160}Er
1·289	^{59}Fe	45·1d	^{58}Fe (n,γ)	0·31	0·98 ± 0·10	43	
			^{59}Co (n,p)	100			
			^{58}Fe (d,p)	0·31			
1·289	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·29	^{41}Ar	110m	^{40}Ar (n,γ)	99·600	0·53 ± 0·02		
			^{40}Ar (d,p)	99·600			
			^{41}K (n,p)	6·91			
1·298	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
1·299	^{114m}In	50·0d	^{113}In (n,γ)	4·23	56 ± 12	0·2	P^{114}In
			^{113}In (d,p)	4·23			
			^{114}Cd (p,n)	28·86			
			^{113}Cd (d,n)	12·26			
			^{115}In (γ,n)	95·77			
			^{115}In $(n,2n)$	95·77			

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1·300	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu ($n,2n$)	52·23			
1·30	^{147}Gd	29h					P^{147}Eu
1·30	^{141}Nd	2·42h	^{141}Pr (p,n)	100		0·3	
			^{141}Pr ($d,2n$)	100			
			^{142}Nd ($n,2n$)	27·13			
			^{142}Nd (γ,n)	27·13			
1·30	^{64}Ga	2·6m	^{64}Zn (p,n)	48·89			
			^{64}Zn ($d,2n$)	48·89			
1·30	^{132}Cs	6·2d	^{133}Cs ($n,2n$)	100			
			^{132}Xe ($d,2n$)	26·89			
			^{132}Xe (p,n)	26·89			
1·30	^{114}Sb	16m					
1·30	^{114}In	72s	^{113}In (n,γ)	4·23	2·0 ± 0·6	0·09	D^{114m}In
			^{115}In (γ,n)	95·77			
			^{115}In ($n,2n$)	95·77			
			^{114}Cd (p,n)	28·86			
1·30	^{115m}Cd	43d	^{114}Cd (n,γ)	28·86	0·14 ± 0·03	9	D^{115}Ag
			^{116}Cd (γ,n)	7·58			
			^{114}Cd (d,p)	28·86			
			^{235}U (n,f)		8 × 10^{-4}%		
~1·3	^{176}W	80m					P^{176}Ta
1·3	^{149}Pm	54h	^{150}Nd ($p,2n$)	5·60		Weak	D^{149}Nd
			^{148}Nd (d,n)	5·72			
			^{149}Sm (n,p)	13·82			
			^{150}Sm (γ,p)	7·47			
			^{235}U (n,f)		1·3 %		
1·3	^{139}Pr	4·5h	^{140}Ce ($p,2n$)	88·48			P^{139}Ce
1·3	^{139}Nd	5·50h	^{141}Pr ($p,3n$)	100			Ancestor ^{139}Ce
1·3	^{92}Tc	4·3m	^{92}Mo ($d,2n$)	15·86			
~1·3	^{210}Tl (RaC″)	1·32m				Weak	D^{214}Bi(RaC) P^{210}Pb(RaD)
1·305	^{59}Cu	81·5s	^{58}Ni (p,γ)	67·76			
1·308	^{188}Re	16·7h	^{187}Re (n,γ)	62·93	75 ± 15	0·05	D^{188}W
			^{187}Re (d,p)	62·93			
1·31	^{116}Sb	60m	^{115}In ($\alpha,3n$)	95·77			
1·31	^{82m}Rb	6·3h	^{79}Br (α,n)	50·52			
1·31	^{47}Ca	4·7d	^{46}Ca (d,p)	0·0033		~70	P^{47}Sc
1·31	^{100}Tc	15·8s	^{100}Mo (p,n)	9·62			

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1·314	^{48}V	16·0d	^{45}Sc (α,n)	100			D^{48}Cr
			^{48}Ti (p,n)	73·99			
			^{47}Ti (d,n)	7·32			
1·314	^{48}Sc	44h	^{51}V (n,α)	99·75			
			^{48}Ti (n,p)	73·99			
			^{48}Ca (p,n)	0·185			
1·317	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn $-$ β^-				
1·317	^{82}Br	35·87h	^{81}Br (n,γ)	49·48	3·1 ± 0·5		
			^{81}Br (d,p)	49·48			
			^{82}Se (d,2n)	9·19			
			^{85}Rb (n,α)	72·15			
1·318	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn D^{207}At
1·320	^{206}Po	8·8d	^{204}Pb (α,2n)	1·40			P^{206}Bi D^{210}Rn D^{208}At
1·32	^{78}As	91·0m	^{81}Br (n,α)	49·48			D^{78}Ge
			^{78}Se (n,p)	23·52			
			^{235}U (n,f)		0·02%		
1·32	^{136}I	86s	^{235}U (n,f)		3·1%		
1·326	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn (d,2n)	5·98			
			^{124}Sn (p,n)	5·98			
1·327	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu (n,2n)	52·23			
1·328	^{192m}Hg	10·0h	^{197}Au (p,5n)	100			P^{193}Hg P^{193m}Au
1·33	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		80	D^{60}Zn
			^{60}Ni (d,2n)	26·16			
			^{58}Ni (α,pn)	67·76			
1·33	^{56}Ni	6·4d	^{54}Fe (α,2n)	5·84			P^{56}Co
1·33	^{189}Ir	41·5h	^{187}Re (α,3n)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os (d,2n)	13·3			
			^{189}Os (d,3n)	16·1			
1·33	^{190}Ir	11d	^{187}Re (α,n)	62·93			
			^{190}Os (d,2n)	26·4			
			^{191}Ir (n,2n)	38·5			

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1·33	^{150}Pm	2·7h	^{150}Nd (p,n)	5·60			
			^{150}Nd $(d,2n)$	5·60			
1·3325	^{60}Co	5·24y	^{59}Co (n,γ)	100	20 ± 3		
			^{59}Co (d,p)	100			
			^{63}Cu (n,α)	69·1			
1·337	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·339	^{194}Ir	19·0h	^{193}Ir (n,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (d,p)	61·5			
			^{195}Pt (γ,p)	33·8			
			^{196}Pt (γ,pn)	25·2			
1·34	^{64}Cu	12·80h	^{63}Cu (n,γ)	69·1	4·3 ± 0·2	Weak	
			^{63}Cu (d,p)	69·1			
			^{64}Zn (n,p)	48·89			
1·34	^{194}Au	39·5h	^{193}Ir $(\alpha,3n)$	61·5			D^{194}Hg
			^{194}Pt $(d,2n)$	32·9			
			^{195}Pt $(d,3n)$	33·8			
			^{194}Pt (p,n)	32·9			
1·34	^{69}Ge	40·4h	^{69}Ga $(d,2n)$	60·2			D^{69}As
			^{69}Ga (p,n)	60·2			
			^{66}Zn (α,n)	27·81			
1·343	^{193m}Hg	10·0h	^{197}Au $(p,5n)$	100			P^{193}Hg
							P^{193m}Au
1·35	^{56}Co	77·3d	^{56}Fe $(d,2n)$	91·68			D^{56}Ni
			^{58}Ni (γ,pn)	67·76			
1·35	^{28}Mg	21·2h	^{30}Si $(\gamma,2p)$	3·12			P^{28}Al
1·35	^{93}Tc	2·75h	^{92}Mo (d,n)	15·86			
			^{92}Mo (p,γ)	15·86			
1·35	^{178}Ta	9·35m	^{178}Hf (p,n)	27·1			D^{178}W
1·352	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·358	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru $(d,2n)$	12·7			
			^{100}Ru (p,n)	12·7			
1·360	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
1·36	^{200}Au	48m	^{199}Au (n,γ)	†	30 ± 15*	<1	D^{200}Pt
			^{200}Hg (n,p)	23·13			
			^{203}Tl (n,α)	29·5			

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1·36	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		3·7 × 10^{-3}%		
1·36	^{70}As	52m					D^{70}Se
1·361	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
	•		^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
1·364	^{200}Tl	26·1h	^{197}Au (α,n)	100			D^{200}Pb
			^{200}Hg $(d,2n)$	23·13			
1·366	^{19}O	29·4s	^{18}O (n,γ)	0·204	0·21 ± 0·04mb		
			^{19}F (n,p)	100			
1·367	^{134}Cs	2·07y	^{133}Cs (n,γ)	100	30 ± 1		
			^{133}Cs (d,p)	100			
			^{134}Xe $(d,2n)$	10·44			
			^{134}Xe (p,n)	10·44			
1·368	^{57}Ni	36h	^{54}Fe (α,n)	5·84		86	P^{57}Co
			^{58}Ni $(n,2n)$	67·76			
1·368	^{24}Na	14·97h	^{23}Na (n,γ)	100	536 ± 10mb		
1·370	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
1·37	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn $(d,2n)$	27·81			
			^{66}Zn (p,n)	27·81			
1·37	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge $(d,2n)$	27·37			
			^{74}Se (d,α)	0·87			
1·37	^{92}Sr	2·60h	^{235}U (n,f)		5·0%		P^{92}Y
1·37	^{211}Rn	16h	^{209}Bi $(\alpha,2n)$	100			P^{211}At
							P^{207}Po
1·37	^{244}Bk	4·4h	^{241}Am (α,n)	†			P^{244}Cm
1·373	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
1·375	^{182}Ta	115·1d	^{181}Ta (n,γ)	99·9877	19 ± 7		
			^{181}Ta (d,p)	99·9877			
			^{182}W (n,p)	26·4			
1·377	^{160m}Ho	5·0h					D^{160}Er

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1·378	^{214}Bi	19·7m					D^{214}Pb
	(RaC)						(RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
1·38	^{106}Rh	130m					
1·38	^{166}Ho	27·3h	^{165}Ho (n,γ)	100	60 ± 12		D^{166}Dy
1·38	^{65}Ga	15·2m	^{64}Zn (d,n)	48·89			P^{65}Zn
			^{64}Zn (p,γ)	48·89			
1·384	^{110m}Ag	253d	^{109}Ag (n,γ)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (d,p)	48·65			
			^{110}Pd $(d,2n)$	11·8			
1·384	^{202}Pb	~3×10^5y					P^{202}Tl
1·388	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag $(n,2n)$	51·35			
1·39	^{112}Ag	3·20h	^{112}Cd (n,p)	24·07			D^{112}Pd
			^{113}Cd (γ,p)	12·26			
			^{115}In (n,α)	95·77			
1·39	^{125}Sn	9·5m	^{124}Sn (n,γ)	5·98	0·2 ± 0·1	1·9	
			^{124}Sn (d,p)	5·98			
1·39	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
1·39	^{24}Al	2·1s	^{24}Mg (p,n)	78·6			
1·40	^{92}Y	10·4h					D^{92}Sr
1·40	^{132}I	2·26h	^{131}I (n,γ)	†	50 ± 40		D^{132}Te
1·4	^{133}I	20·8h	^{235}U (n,f)		4·6%	1	Descendant
							^{133m}Te
							P^{133}Xe
							P^{133m}Xe
							(2·4%)
							D^{133}Te
1·4	^{94}Y	16·5m	^{94}Zr (n,p)	17·40			D^{94}Sr
			^{235}U (n,f)		5%		
~1·4(?)	^{138}Pr	2·0h	^{140}Ce $(p,3n)$	88·48			
1·405	^{206}Bi	6·4d	^{205}Tl $(\alpha,3n)$	70·50			D^{206}Po
			^{206}Pb $(d,2n)$	25·1			D^{210}At
			^{207}Pb $(d,3n)$	21·7			
1·410	^{76}As	26·4h	^{75}As (n,γ)	100	5·4 ± 1·0		
			^{75}As (d,p)	100			
			^{79}Br (n,α)	50·52			
			^{77}Se (γ,p)	7·58			

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1·41	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
1·41	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
1·41	^{55}Co	18·2h	^{54}Fe (d,n)	5·84			P^{55}Fe
			^{54}Fe (p,γ)	5·84			
1·41	^{99}Rh	4·7h	^{99}Ru (p,n)	12·7			D^{99}Pd
			^{98}Ru (d,n)	1·91			
1·41	^{152}Eu	9·2h	^{151}Eu (n,γ)	47·77	1400 ± 300*		
			^{151}Eu (d,p)	47·77			
			^{153}Eu $(n,2n)$	52·23			
1·413	^{91}Sr	9·67h	^{90}Sr (n,γ)	†	1·0 ± 0·6		P^{91m}Y
			^{94}Zr (n,α)	17·40			P^{91}Y
			^{235}U (n,f)		5·0%		D(1·7m)^{91}Rb
							D(14m)^{91}Rb
1·416	^{214}Bi(RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
1·416	^{152}Eu	12·7y					
1·42	^{126}I	13·3d	^{123}Sb (α,n)	42·75			
			^{125}Te (d,n)	6·99			
			^{126}Te (p,n)	18·71			
			^{127}I $(n,2n)$	100			
			^{127}I (γ,n)	100			
1·43	^{234}Pa (UX$_2$)	6·66h	^{233}Pa (n,γ)	†	25 ± 4		P^{234}U(U$_{II}$)
							D^{234}Pa(UX$_2$)
							D^{234}Th(UX$_1$) (0·63%)
1·43	^{139}Ba	84·0m	^{138}Ba (n,γ)	71·66	0·55 ± 0·1		D^{139}Cs
			^{138}Ba (d,p)	71·66			Descendant ^{139}Xe
			^{139}La (n,p)	99·911			
			^{142}Ce (n,α)	11·07			
			^{235}U (n,f)		6·3%		
1·43	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		73	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
1·43	^{207}Bi	8·0y	^{206}Pb $(d,3n)$	52·3			D^{211}At
							P^{207m}Pb
1·435	^{160m}Ho	5·0h					D^{160}Er

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γ-Energy (Mev)	Nuclide	Half-Life	Some Modes of Formation	Per Cent Abundance of Relevant Stable Isotope	Thermal Neutron Activation Cross Section (Barns) or Fission Yield	Per Cent Abundance of γ-Radiation	Radioactive Parent or Daughter of
1·437	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{182}W (*n*,*p*)	26·4			
1·44	^{234m}Pa	1·175m	^{233}Pa (*n*,γ)	†	43 ± 5		D^{234}Th(UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
1·44	^{52}V	3·76m	^{51}V (*n*,γ)	99·75	4·5 ± 0·9		
			^{51}V (*d*,*p*)	99·75			
			^{55}Mn(*n*,α)	100			
1·44	^{138}La	1 × 10^{11}y		0·089			
1·441	^{210}At	8·3h	^{209}Bi (α,3*n*)	100			P^{210}Po
							P^{206}Bi
1·45	^{188}Ir	41·5h	^{187}Re (α,3*n*)	62·93			D^{188}Pt
			^{185}Re (α,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*d*,3*n*)	16·1			
1·45	^{92}Y	3·60h	^{92}Zr (*n*.*p*)	17·11			D^{92}Sr
			^{94}Zr (*d*,α)	17·40			
1·454	^{182}Ta	115·1d	^{181}Ta (*n*,γ)	99·9877	19 ± 7		
			^{181}Ta (*d*,*p*)	99·9877			
			^{183}W (*n*,*p*)	26·4			
1·46	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	12	P^{135m}Xe (30%)
							P^{135}Xe(70%)
							D^{135}Te
1·46	^{52m}Mn	21·3m	^{52}Cr (*d*,2*n*)	83·76		0·05(?)	D^{52}Fe
			^{52}Cr (*p*,*n*)	83·76			
			^{54}Fe (γ,*pn*)	5·84			
			^{54}Fe (*d*,α)	5·84			
1·46	^{52}Mn	5·60d	^{52}Cr (*p*,*n*)	83·76			
			^{52}Cr (*d*,2*n*)	83·76			
			^{54}Fe (*d*,α)	5·84			
1·46	^{40}Cl	1·4m					
1·46	^{72}As	26h	^{69}Ga (α,*n*)	60·2			D^{72}Se
			^{72}Ge (*p*,*n*)	27·37			
			^{72}Ge (*d*,2*n*)	27·37			
			^{74}Se (*d*,α)	0·87			
1·46	^{82m}Rb	6·3h	^{79}Br (α,*n*)	50·52			
1·46	^{40}K	1·25 × 10^{9}y					
1·46	^{84}Br	6·0m				60	
1·463	^{72}Ga	14·3h	^{71}Ga (*n*,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d*,*p*)	39·8			
			^{72}Ge (*n*,*p*)	27·37			
			^{72}Zn–β^{-}				

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1·466	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
1·47	^{62}Co	13·9m	^{62}Ni (*n*,*p*)	3·66			
1·47	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
1·47	^{67}Ge	21m	^{70}Ge (*d*,*p*4*n*)	20·55			P^{67}Ga
1·47	^{84}Br	31·8m	^{87}Rb (*n*,α)	27·85			
1·475	^{82}Br	35·87h	^{81}Br (*n*,γ)	49·48	3·1 ± 0·5		
			^{81}Br (*d*,*p*)	49·48			
			^{82}Se (*d*,2*n*)	9·19			
			^{85}Rb (*n*,α)	72·15			
1·478	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
1·479	^{93m}Mo	6·95h	^{92}Mo (*n*,γ)	15·86	< 6mb		
			^{90}Zr (α,*n*)	51·46			
			^{93}Nb (*p*,*n*)	100			
			^{93}Nb (*d*,2*n*)	100			
1·487	^{114m}In	53·99m	^{115}In (*n*,γ)	95·77	155 ± 10	21	
			^{115}In (*d*,*p*)	95·77			
			^{116}Cd (*p*,*n*)	7·58			
1·487	^{210}At	8·3h	^{209}Bi (α,3*n*)	100			P^{210}Po P^{206}Bi
1·489	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg P^{193m}Au
1·49	^{65}Ni	2·564h	^{64}Ni (*n*,γ)	1·16	1·6 ± 0·2		
			^{64}Ni (*d*,*p*)	1·16			
			^{65}Cu (*n*,*p*)	30·9			
			^{68}Zn (*n*,α)	18·56			
1·49	^{146}Pr	24·4m					D^{146}Ce
1·49	^{172}Tm	63·6h					D^{172}Er
1·49	^{100}Tc	15·8s	^{100}Mo (*p*,*n*)	9·62			
1·50	^{93}Tc	2·75h	^{92}Mo (*d*,*n*)	15·86			
			^{92}Mo (*p*,γ)	15·86			
~1·50	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			

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1·50	^{244}Bk	4·4h	^{241}Am (*α*,*n*)	†			P^{244}Cm
1·50	^{74}Ga	7·8m				Weak	
1·5	^{144}Pr	17·27m				Weak	D^{144}Ce
~1·5	^{77}Ge	11·3h	^{76}Ge (*n*,*γ*)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,*α*)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}3 \times 10^{-3}\%$		
~1·5	^{240}Np	7·3m	^{239}Np (*n*,*γ*)	†	35 ± 10*	3·5	D^{240}U
1·503	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·504	^{110m}Ag	253d	^{109}Ag (*n*,*γ*)	48·65	3·2 ± 0·4		P^{110}Ag
			^{109}Ag (*d*,*p*)	48·65			
			^{110}Pd (*d*,2*n*)	11·8			
1·507	^{194}Ir	19·0h	^{193}Ir (*n*,*γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (*γ*,*p*)	33·8			
			^{196}Pt (*γ*,*pn*)	25·2			
1·509	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
1·510	^{202}Bi	12·3h					P^{202}Pb
							P^{202m}Pb
							D^{202}Po
							D^{207}At
1·517	^{200}Tl	26·1h	^{197}Au (*α*,*n*)	100			D^{200}Pb
			^{200}Hg (*d*,2*n*)	23·13			
1·52	^{39}Cl	55·5m	^{40}Ar (*γ*,*p*)	99·600			
1·523	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
1·53	^{106}Ag	8·2d	^{103}Rh (*α*,*n*)	100			
			^{105}Pd (*d*,*n*)	22·2			
			^{106}Pd (*p*,*n*)	27·3			
			^{107}Ag (*n*,2*n*)	51·35			
1·53	^{42}K	12·52h	^{41}K (*n*,*γ*)	6·91	1·1 ± 0·1		D^{42}Ar
			^{41}K (*d*,*p*)	6·91			
			^{45}Sc (*n*,*α*)	100			
1·53	^{89m}Zr	4·4m	^{89}Y (*p*,*n*)	100			D^{89m}Nb
			^{90}Zr (*n*,2*n*)(?)	51·46			
			^{90}Zr (*γ*,*n*)	51·46			

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1·537	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
1·54	^{91m}Mo	66s	^{92}Mo (γ,n)	15·86			
1·54	^{166}Ho	27·3h	^{165}Ho (n,γ)	100	60 ± 12		D^{166}Dy
1·55	^{117m}Cd	3·0h	^{116}Cd (n,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (d,p)	7·58			D^{117}Ag
1·55	^{136}I	86s	^{235}U (n,f)		3·1%		
1·55	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr
							P^{89}Sr
1·55	^{88}Kr	2·77h	^{87}Kr (n,γ)		< 600		P^{88}Rb
							D^{88}Br
1·55	^{106}Rh	30s					D^{106}Ru
1·552	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·557	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru $(d,2n)$	12·7			
			^{100}Ru (p,n)	12·7			
1·56	^{209}Tl	2·2m					D^{213}Bi
							P^{209}Pb
1·56	^{50}Sc	1·5m				~100	
1·56	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
1·56	^{106}Rh	130m					
1·57	^{224}Np	4·40d	^{235}U $(d,3n)$	0·720‡			D^{234}Pu
			^{235}U $(\alpha,p4n)$	0·720‡			
			^{235}U $(p,2n)$	0·720‡			
			^{233}U (d,n)	†			
			^{233}U $(\alpha,p2n)$	†			
1·57	^{94}Nb	1·8 × 10^{4}y	^{93}Nb (n,γ)	100		8	
1·57	^{84}Br	31·8m	^{67}Rb (n,α)	27·85			
1·572	^{228}Pa	22h					D^{228}U
							P^{224}Ac
							P^{228}Th (RdTh)
1·572	^{142}Pr	19·2h	^{141}Pr (n,γ)	100	10 ± 3		
			^{141}Pr (d,p)	100			
			^{142}Ce (p,n)	11·07			
			^{139}La (α,n)	99·911			
1·58	^{56}Ni	6·4d	^{54}Fe $(\alpha,2n)$	5·84			P^{56}Co

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1·58(?)	^{66}Ga	9·45h	^{63}Cu (α,*n*)	69·1			D^{66}Ge
			^{66}Zn (*d*,2*n*)	27·81			
			^{66}Zn (*p*,*n*)	27·81			
1·58	^{102}Rh	210d	^{101}Ru (*d*,*n*)	17·0			
			^{103}Rh (*n*,2*n*)	100			
			^{103}Rh (γ,*n*)	100			
1·58	^{25}Al	7·6s	^{25}Mg (*p*,*n*)	10·11		Weak	
1·586	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn D^{207}At
1·59	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,γ)	‡	520 ± 50		D^{228}Ra (MsTh$_1$) P^{228}Th (RdTh)
1·59	^{135}La	19·5h	^{133}Cs (α,2*n*)	100			D^{135}Ce
			^{134}Ba (*d*,*n*)	2·42			
			^{135}Ba (*p*,*n*)	6·59			
1·59	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
1·595	^{72}Ga	14·3h	^{71}Ga (*n*,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d*,*p*)	39·8			
			^{72}Ge (*n*,*p*)	27·37			
			^{72}Zn$^{-}\beta^{-}$				
1·596	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
1·60	^{140}La	40·22h	^{139}La (*n*,γ)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (*d*,*p*)	99·911			
			^{140}Ce (*n*,*p*)	88·48			
1·60	^{38}Cl	37·29m	^{37}Cl (*n*,γ)	24·47	0·56 ± 0·12		D^{38}S
			^{37}Cl (*d*,*p*)	24·47			
			^{41}K (*n*,α)	6·91			
1·6	^{139}Pr	4·5h	^{140}Ce (*p*,2*n*)	88·48			P^{139}Ce
~1·6	^{154}Eu	16y	^{153}Eu (*n*,γ)	52·23	420 ± 100*		
			^{153}Eu (*d*,*p*)	52·23			
1·6	^{188}Ir	41·5h	^{187}Re (α,3*n*)	62·93			D^{188}Pt
			^{185}Re (α,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*d*,3*n*)	16·1			
1·604	^{210}At	8·3h	^{209}Bi (α,3*n*)	100			P^{210}Po P^{206}Bi
1·610	^{188}Re	16·7h	^{187}Re (*n*,γ)	62·93	75 ± 15	0·07	D^{188}W
			^{187}Re (*d*,*p*)	62·93			

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1·61	^{69}Ge	40·4h	^{69}Ga (*d*,2*n*)	60·2			D^{69}As
			^{69}Ga (*p*,*n*)	60·2			
			^{66}Zn (*α*,*n*)	27·81			
1·61	^{25}Na	60s	^{25}Mg (*n*,*p*)	10·11			
			^{26}Mg (*γ*,*p*)	11·29			
1·615	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·618	^{194}Ir	19·0h	^{193}Ir (*n*,*γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (*γ*,*p*)	33·8			
			^{196}Pt (*γ*,*pn*)	25·2			
1·62	^{112}Ag	3·20h	^{112}Cd (*n*,*p*)	24·07			D^{112}Pd
			^{113}Cd (*γ*,*p*)	12·26			
			^{115}In (*n*,*α*)	95·77			
1·62	^{58}Co	71·3d	^{58}Ni (*n*,*p*)	67·76			
			^{55}Mn (*α*,*n*)	100			
			^{58}Fe (*p*,*n*)	0·31			
			^{56}Fe (*α*,*np*)	91·68			
1·62	^{166}Ho	27·3h	^{165}Ho (*n*,*γ*)	100	60 ± 12		D^{166}Dy
1·627	^{20}F	10·7s	^{19}F (*n*,*γ*)	100	9 ± 2mb		
			^{19}F (*d*,*p*)	100			
			^{23}Na (*n*,*α*)	100			
1·63	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	57·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	57·46			
			^{92}Mo (*d*,*α*)	15·86			
			^{92}Mo (*γ*,*pn*)	15·86			
1·64	^{228}Ac (MsTh$_2$)	6·13h	^{227}Ac (*n*,*γ*)	‡	520 ± 50		D^{228}Ra (MsTh$_1$)
							P^{228}Th (RdTh)
1·646	^{193m}Hg	10·0h	^{197}Au (*p*,5*n*)	100			P^{193}Hg
							P^{193m}Au
1·65	^{23}Ne	40·2s	^{22}Ne (*n*,*γ*)	8·82	36 ± 15mb		
			^{23}Na (*n*,*p*)	100			
			^{26}Mg (*n*,*α*)	11·29			
1·662	^{194}Ir	19·0h	^{193}Ir (*n*,*γ*)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (*γ*,*p*)	33·8			
			^{196}Pt (*γ*,*pn*)	25·2			
1·663	^{207}Po	5·7h	^{206}Pb (*α*,3*n*)	25·1			D^{211}Rn
							D^{207}At

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1·68	^{234}Pa (UX_2)	6·66h	^{233}Pa (*n*,γ)	†	25 ± 4		P^{234}U(U_{II})
							D^{234}Pa(UX_2)
							D^{234}Th(UX_1) (0·63%)
1·68	^{72}As	26h	^{69}Ga (α,*n*)	60·2			D^{72}Se
			^{72}Ge (*p*,*n*)	27·37			
			^{72}Ge (*d*,2*n*)	27·37			
			^{74}Se (*d*,α)	0·87			
1·68	^{150}Pm	2·7h	^{150}Nd (*p*,*n*)	5·60			
			^{150}Nd (*d*,2*n*)	5·60			
1·69	^{234m}Pa	1·175m	^{233}Pa (*n*,γ)	†	43 ± 5		D^{234}Th(UX_1)
							P^{234}U(U_{II})
							P^{234}Pa(UZ)
1·692	^{124}Sb	60·9d	^{123}Sb (*n*,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (*d*,*p*)	46·75			
			^{124}Sn (*d*,2*n*)	5·98			
			^{124}Sn (*p*,*n*)	5·98			
1·70	^{59}Cu	81·5s	^{58}Ni (*p*,γ)	67·76			
~1·7(?)	^{138}Pr	2·0h	^{140}Ce (*p*,3*n*)	88·48			
1·71	^{188}Ir	41·5h	^{187}Re (α,3*n*)	62·93			D^{188}Pt
			^{185}Re (α,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*d*,3*n*)	16·1			
1·719	^{160m}Ho	5·0h					D^{160}Er
1·720	^{206}Bi	6·4d	^{205}Tl (α,3*n*)	70·50			D^{206}Po
			^{206}Pb (*d*,2*n*)	25·1			D^{210}At
			^{207}Pb (*d*,3*n*)	21·7			
1·72	^{244}Bk	4·4h	^{241}Am (α,*n*)	†			P^{244}Cm
1·72	^{106}Ag	8·2d	^{103}Rh (α,*n*)	100			
			^{105}Pd (*d*,*n*)	22·2			
			^{106}Pd (*p*,*n*)	27·3			
			^{107}Ag (*n*,2*n*)	51·35			
1·72	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	19	P^{135m}Xe (30%)
							P^{135}Xe(70%)
							D^{135}Te
1·72	^{97}Zr	17·0h	^{96}Zr (*n*,γ)	2·80	0·1 ± 0·05		P^{97m}Nb
			^{96}Zr (*d*,*p*)	2·80			Descendant ^{97}Kr
			^{100}Mo (*n*,α)	9·62			
			^{235}U (*n*,*f*)		6·2%		

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1·72	^{124}I	4·5d	^{121}Sb (α,*n*)	57·25			
			^{124}Te (*p*,*n*)	4·61			
			^{123}Sb (α,3*n*)	42·75			
1·728	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
1·73	^{35}Ar	1·83s	^{32}S (α,*n*)	95·018			
			^{35}Cl (*p*,*n*)	75·53			
1·734	^{90}Y	64·2h	^{90}Zr (*n*,*p*)	51·46		Very weak	D^{90}Sr
			^{93}Nb (*n*,α)	100			
1·74	^{62}Co	13·9m	^{62}Ni (*n*,*p*)	3·66			
1·74	^{70}As	52m					D^{70}Se
1·74	^{84}Br	31·8m	^{87}Rb (*n*,α)	27·85			
1·75	^{56}Ni	6·4d	^{54}Fe (α,2*n*)	5·84			P^{58}Co
1·75	^{77}Ge	11·3h	^{76}Ge (*n*,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (*d*,*p*)	7·67			
			^{80}Se (*n*,α)	49·82			
			^{235}U (*n*,*f*)		$3{\cdot}7 \times 10^{-3}$%		
1·75	^{72}As	26h	^{69}Ga (α,*n*)	60·2			D^{72}Se
			^{72}Ge (*p*,*n*)	27·37			
			^{72}Ge (*d*,2*n*)	27·37			
			^{74}Se (*d*,α)	0·87			
1·75	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{60}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,α)	15·86			
			^{92}Mo (γ,*pn*)	15·86			
1·75(?)	^{87}Kr	78m	^{86}Kr (*n*,γ)	17·37	60 ± 20mb		D^{87}Br
			^{86}Kr (*d*,*p*)	17·37			
			^{87}Rb (*n*,*p*)	27·85			
1·76	^{60}Cu	23·4m	^{60}Ni (*p*,*n*)	26·16		52	D^{60}Zn
			^{60}Ni (*d*,2*n*)	26·16			
			^{58}Ni (α,*pn*)	67·76			
1·76	^{56}Co	77·3d	^{56}Fe (*d*,2*n*)	91·68			D^{56}Ni
			^{58}Ni (γ,*pn*)	67·76			
			^{54}Fe (α,*np*)	5·84			
1·763	^{207}Po	5·7h	^{206}Pb (α,3*n*)	25·1			D^{211}Rn D^{207}At
1·764	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
1·766	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·77	^{106}Rh	30s					D^{106}Ru
1·771	^{207}Bi	8·0y	^{208}Pb (*d*,3*n*)	52·3			D^{211}At
							P^{207m}Pb
1·777	^{205}Bi	14·5d					D^{205}Po
							D^{209}At
							P^{205}Pb
1·78	^{134}I	52·5m	^{235}U (*n*,*f*)		5·7%		D^{134}Te
1·78	^{139}Xe	17m					P^{139}Cs
1·78	^{28}Al	2·27m	^{27}Al (*n*,γ)	100	0·21 ± 0·02		D^{28}Mg
			^{27}Al (*d*,*p*)	100			
			^{31}P (*n*,α)	100			
1·783	^{188}Re	16·7h	^{187}Re (*n*,γ)	62·93	75 ± 15	0·02	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
1·79	^{172}Tm	63·6h					D^{172}Er
1·79	^{28}P	0·28s				75	
1·80	^{135}I	6·68h	^{235}U (*n*,*f*)		5·6%	11	P^{135m}Xe (30%)
							P^{135}Xe(70%)
							D^{135}Te
1·80	^{211}Rn	16h	^{209}Bi (α,2*n*)	100			P^{211}At
							P^{207}Po
1·8	^{197}Ir	7m	^{198}Pt (γ,*p*)	7·19			
1·8	^{140}La	77m					D^{140}Ba
1·8	^{133}Ce	6·30h	^{139}La (*p*,7*n*)	99·911			P^{133}La
1·8	^{100}Tc	15·8s	^{100}Mo (*p*,*n*)	9·62			
1·802	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
1·803	^{188}Re	16·7h	^{187}Re (*n*,γ)	62·93	75 ± 15	0·03	D^{188}W
			^{187}Re (*d*,*p*)	62·93			
1·81	^{56}Mn	2·576h	^{55}Mn (*n*,γ)	100	13·3 ± 0·2		
			^{55}Mn (*d*,*p*)	100			
			^{59}Co (*n*,α)	100			
			^{57}Fe (γ,*p*)	2·17			
1·83	^{234m}Pa	1·175m	^{233}Pa (*n*,γ)	†	43 ± 5		D^{234}Th(UX$_1$)
							P^{234}U(U$_{II}$)
							P^{234}Pa(UZ)
1·83	^{112}Ag	3·20h	^{112}Cd (*n*,*p*)	24·07			D^{112}Pd
			^{113}Cd (γ,*p*)	12·26			
			^{115}In (*n*,α)	95·77			

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1·83	^{26}Al	8×10^5y	^{23}Na (α,n)	100		96	
			^{26}Mg (p,n)	11·29			
			^{25}Mg (p,γ)	10·11			
			^{27}Al (γ,n)	100			
1·83	^{92}Nb	10·1d	^{89}Y (α,n)	100			
			^{92}Zr (p,n)	17·11			
			^{93}Nb (γ,n)	100			
			^{94}Mo (d,α)	9·12			
			^{92}Mo (n,p)	15·86			
1·84	^{55}Co	18·2h	^{54}Fe (d,n)	5·84			P^{55}Fe
			^{54}Fe (p,γ)	5·84			
1·84	^{156}Eu	15·4d	^{155}Eu (n,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (n,f)		0·013%		
1·846	^{203}Bi	12·3h					P^{203}Pb
							P^{203m}Pb
							D^{203}Po
							D^{207}At
1·847	^{207}Po	5·7h	^{206}Pb (α,3n)	25·1			D^{211}Rn
							D^{207}At
1·849	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
1·85	^{94}Tc	53m	^{94}Mo (p,n)	9·12			D^{94}Ru
			^{94}Mo (d,2n)	9·12			
1·85	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag (n,2n)	51·35			
1·85(?)	^{90}Nb	14·60h	^{90}Zr (d,2n)	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
1·85	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
1·853	^{88}Y	104d	^{88}Sr (d,2n)	82·56			D^{88}Zr
			^{88}Sr (p,n)	82·56			
			^{89}Y (n,2n)	100			
1·859	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn β^-				

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1·86	^{65}Ga	15·2m	^{64}Zn (*d*,*n*)	48·89			P^{65}Zn
			^{64}Zn (*p*,γ)	48·89			
1·863	^{205}Bi	14·5d					D^{205}Po D^{209}At P^{205}Pb
1·88	^{68}Ga	68m	^{68}Zn (*p*,*n*)	18·56			D^{68}Ge
			^{67}Zn (*d*,*n*)	4·11			
			^{65}Cu (α,*n*)	30·9			
			^{70}Ge (γ,*pn*)	20·55			
1·88	^{93}Y	10·4h					D^{93}Sr
1·88	^{38}S	2·87h				~70	P (37m)^{38}Cl
1·89	^{136}I	86s	^{235}U (*n*,*f*)		3·1%		
1·89	^{57}Ni	36h	^{54}Fe (α,*n*)	5·84		14	P^{57}Co
			^{58}Ni (*n*,2*n*)	67·76			
			^{58}Ni (γ,*n*)	67·76			
1·89	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
1·89	^{63}Zn	38·3m	^{63}Cu (*d*,2*n*)	69·1		~4	
			^{63}Cu (*p*,*n*)	69·1			
			^{64}Zn (γ,*n*)	48·89			
			^{64}Zn (*n*,2*n*)	48·89			
1·89	^{84}Br	6·0m				20	
1·896	^{203}Bi	12·3h					P^{203}Pb P^{203m}Pb D^{203}Po D^{207}At
1·90	^{84}Rb	33·0d	^{81}Br (α,*n*)	49·48			
			^{85}Rb (*n*,2*n*)	72·15			
			^{86}Sr (*d*,α)	9·86			
1·90	^{84}Br	31·8m	^{87}Rb (*n*,α)	27·85			
1·9	^{74}Ga	7·8m				Weak	
1·9	^{92}Y	3·60h	^{92}Zr (*n*,*p*)	17·11			D^{92}Sr
			^{94}Zr (*d*,α)	17·40			
1·907	^{205}Bi	14·5d					D^{205}Po D^{209}At P^{205}Pb
1·91	^{105}Cd	55m	^{102}Pd (α,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			

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1·92	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge $(d,2n)$	27·37			
			^{74}Se (d,α)	0·87			
1·93	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn $(d,2n)$	27·81			
			^{66}Zn (p,n)	27·81			
1·93	^{86}Y	14·6h	^{88}Sr $(p,3n)$	82·56			D^{86}Zr
1·934	^{100}Rh	20·8h	^{99}Ru (d,n)	12·7			D^{100}Pd
			^{100}Ru $(d,2n)$	12·7			
			^{100}Ru (p,n)	12·7			
1·94	^{188}Ir	41·5h	^{187}Re $(\alpha,3n)$	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os $(d,2n)$	13·3			
			^{189}Os $(d,3n)$	16·1			
1·94	^{156}Eu	15·4d	^{155}Eu (n,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (n,f)		0·013%		
1·95	^{124}I	4·5d	^{121}Sb (α,n)	57·25			
			^{124}Te (p,n)	4·61			
			^{123}Sb $(\alpha,3n)$	42·75			
1·95	^{150}Pm	2·7h	^{150}Nd (p,n)	5·60			
			^{150}Nd $(d,2n)$	5·60			
1·959	^{188}Re	16·7h	^{187}Re (n,γ)	62·93	75 ± 15	0·01	D^{188}W
			^{187}Re (d,p)	62·93			
1·96	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag $(p,3n)$	51·35			
			^{106}Cd $(n,2n)$	1·22			
1·96	^{125}Sn	9·4d	^{124}Sn (n,γ)	5·98	4 ± 2mb		P^{125}Sb
			^{124}Sn (d,p)	5·98			
			^{235}U (n,f)		0·012%		
1·96	^{132}I	2·26h	^{131}I (n,γ)	†	50 ± 40		D^{132}Te
1·96	^{25}Na	60s	^{25}Mg (n,p)	10·11			
			^{26}Mg (γ,p)	11·29			
1·96	^{106}Rh	30s					D^{106}Ru
1·98(?)	^{90}Nb	14·60h	^{90}Zr $(d,2n)$	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
2·00	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		$3{\cdot}7 \times 10^{-3}$%		

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2·00	^{117m}Cd	3·0h	^{116}Cd (*n*,γ)	7·58	1·5 ± 0·3		Ancestor ^{117m}In
			^{116}Cd (*d*,*p*)	7·58			D^{117}Ag
2·00	^{105}Cd	55m	^{102}Pd (α,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			
2·0	^{140}La	77m					D^{140}Ba
2·0	^{93}Tc	2·75h	^{92}Mo (*d*,*n*)	15·86			
			^{92}Mo (*p*,γ)	15·86			
2·01	^{138}Xe	17m					P^{138}Cs
2·017	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
2·02	^{83}Se	70s	^{82}Se (*n*,γ)	9·19	50 ± 25mb		P^{83}Br
			^{235}U (*n*,*f*)		0·21%		
2·02	^{56}Co	77·3d	^{56}Fe (*d*,2*n*)	91·68			D^{56}Ni
			^{58}Ni (γ,*pn*)	67·76			
			^{54}Fe (α,*np*)	5·84			
2·03	^{62}Co	13·9m	^{62}Ni(*n*,*p*)	3·66			
2·04	^{70}As	52m					D^{70}Se
2·048	^{194}Ir	19·0h	^{193}Ir (*n*,γ)	61·5	130 ± 30		D^{194}Os
			^{193}Ir (*d*,*p*)	61·5			
			^{195}Pt (γ,*p*)	33·8			
			^{196}Pt (γ,*pn*)	25·2			
2·05	^{84}Br	31·8m	^{87}Rb (*n*,α)	27·85			
2·05	^{87}Kr	78m	^{86}Kr (*n*,γ)	17·37	60 ± 20mb		D^{87}Br
			^{86}Kr (*d*,*p*)	17·37			
			^{87}Rb (*n*,*p*)	27·85			
2·05	^{156}Eu	15·4d	^{155}Eu (*n*,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (*n*,*f*)		0·013%		
2·05	^{105}Cd	55m	^{102}Pd (α,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			
2·05	^{194}Au	39·5h	^{193}Ir (α,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
2·05	^{188}Ir	41·5h	^{187}Re (α,3*n*)	62·93			D^{188}Pt
			^{185}Re (α,*n*)	37·07			
			^{188}Os (*d*,2*n*)	13·3			
			^{189}Os (*d*,3*n*)	16·1			

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2·06	^{76}As	26·4h	^{75}As (n,γ)	100	5·4 ± 1·0		
			^{75}As (d,p)	100			
			^{79}Br (n,α)	50·52			
			^{77}Se (γ,p)	7·58			
2·061	^{207}Po	5·7h	^{206}Pb $(\alpha,3n)$	25·1			D^{211}Rn
							D^{207}At
2·07	^{44}K	22·0m	^{44}Ca (n,p)	2·06			
2·08	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge $(d,2n)$	27·37			
			^{74}Se (d,α)	0·87			
2·08	^{101}Mo	14·61m	^{100}Mo (n,γ)	9·62	0·20 ± 0·05		P^{101}Tc
			^{100}Mo (d,p)	9·62			
2·088	^{124}Sb	60·9d	^{123}Sb (n,γ)	46·75	2·5 ± 0·5		
			^{123}Sb (d,p)	46·75			
			^{124}Sn $(d,2n)$	5·98			
			^{124}Sn (p,n)	5·98			
2·090	^{116m}In	53·99m	^{115}In (n,γ)	95·77	155 ± 10	25	
			^{115}In (d,p)	95·77			
			^{116}Cd (p,n)	7·58			
2·10	^{106}Rh	30s					D^{106}Ru
2·10	^{34}P	12·4s	^{34}S (n,p)	4·215			
			^{37}Cl (n,α)	24·47			
2·10	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag $(n,2n)$	51·35			
2·10	^{34m}Cl	32·40m	^{31}P (α,n)	100			P^{34}Cl
			^{34}S (p,n)	4·215			
			^{33}S (d,n)	0·750			
2·11	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
2·11	^{112}Ag	3·20h	^{112}Cd (n,p)	24·07			D^{112}Pd
			^{113}Cd (γ,p)	12·26			
			^{115}In (n,α)	95·77			
2·117	^{214}Bi(RaC)	19·7m					D^{214}Pb(RaB)
							D^{218}At
							P^{214}Po(RaC′)
							P^{210}Tl(RaC″)
2·13	^{56}Mn	2·576h	^{55}Mn (n,γ)	100	13·3 ± 0·2		
			^{55}Mn (d,p)	100			
			^{59}Co (n,α)	100			
			^{57}Fe (γ,p)	2·17			

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2·13	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		5·7	D^{60}Zn
			^{60}Ni ($d,2n$)	26·16			
			^{58}Ni (α,pn)	67·76			
2·14(?)	^{90}Nb	14·60h	^{90}Zr ($d,2n$)	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
2·14	^{93}Y	10·4h					D^{93}Sr
2·14	^{156}Eu	15·4d	^{155}Eu (n,γ)	†	14000 ± 4000*		D^{156}Sm
			^{235}U (n,f)		0·013%		
2·15	^{38}Cl	37·29m	^{37}Cl (n,γ)	24·47	0·56 ± 0·12		D^{38}S
			^{37}Cl (d,p)	24·47			
			^{41}K (n,α)	6·91			
2·15	^{194}Au	39·5h	^{193}Ir ($\alpha,3n$)	61·5			D^{194}Hg
			^{194}Pt ($d,2n$)	32·9			
			^{195}Pt ($d,3n$)	33·8			
			^{194}Pt (p,n)	32·9			
2·16	^{30}P	2·55m	^{27}Al (α,n)	100		0·5	
			^{30}Si (p,n)	3·12			
			^{31}P ($n,2n$)	100			
2·16	^{38}K	7·7m	^{35}Cl (α,n)	75·53			
			^{40}Ca (d,α)	96·97			
			^{39}K ($n,2n$)	93·08			
			^{39}K (γ,n)	93·08			
2·17	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
2·17	^{55}Co	18·2h	^{54}Fe (d,n)	5·84			P^{55}Fe
			^{54}Fe (p,γ)	5·84			
2·18	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
2·18	^{90}Nb	14·60h	^{90}Zr ($d,2n$)	51·46			D^{90}Mo
			^{90}Zr (p,n)	51·46			
			^{92}Mo (d,α)	15·86			
			^{92}Mo (γ,pn)	15·86			
2·18	^{188}Ir	41·5h	^{187}Re ($\alpha,3n$)	62·93			D^{188}Pt
			^{185}Re (α,n)	37·07			
			^{188}Os ($d,2n$)	13·3			
			^{189}Os ($d,3n$)	16·1			
2·19	^{88}Kr	2·77h	^{87}Kr (n,γ)		< 600		P^{88}Rb D^{88}Br
2·19	^{144}Pr	17·27m				Weak	D^{144}Ce

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
2·20	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
2·20	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr P^{89}Sr
2·20	^{119}Sb	16m					
2·2	^{132}I	2·26h	^{131}I (n,γ)	†	50 ± 40		D^{132}Te
2·203	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn$^{-}\beta^{-}$				
2·204	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
2·21	^{32}Cl	0·306s				70	
2·21	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		18	D^{138}Xe
			^{137}Cs (n,γ)	†	<2		Descendant ^{138}I
2·21	^{54}V	55s					
2·23	^{210}At	8·3h	^{209}Bi ($\alpha,3n$)	100		Weak	P^{210}Po P^{206}Bi
2·24	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
2·25	^{64}Ga	2·6m	^{64}Zn (p,n)	48·89			
			^{64}Zn ($d,2n$)	48·89			
2·25	^{48}V	16·0d	^{45}Sc (α,n)	100			D^{48}Cr
			^{48}Ti (p,n)	73·99			
			^{47}Ti (d,n)	7·32			
2·26	^{106}Rh	130m					
2·28	^{105}Cd	55m	^{102}Pd (α,n)	0·96			
			^{107}Ag ($p,3n$)	51·35			
			^{106}Cd ($n,2n$)	1·22			
2·30	^{77}Ge	11·3h	^{76}Ge (n,γ)	7·67	80 ± 20mb		P^{77}As
			^{76}Ge (d,p)	7·67			
			^{80}Se (n,α)	49·82			
			^{235}U (n,f)		$3{\cdot}7\times10^{-3}$%		
2·30	^{90m}Zr	0·83s					
2·30	^{14}O	72·1s	^{14}N (p,n)	99·635			

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γ-Energy (Mev)	*Nuclide*	*Half-Life*	*Some Modes of Formation*	*Per Cent Abundance of Relevant Stable Isotope*	*Thermal Neutron Activation Cross Section (Barns) or Fission Yield*	*Per Cent Abundance of γ-Radiation*	*Radioactive Parent or Daughter of*
~2·30	^{194}Au	39·5h	^{193}Ir (*α*,3*n*)	61·5			D^{194}Hg
			^{194}Pt (*d*,2*n*)	32·9			
			^{195}Pt (*d*,3*n*)	33·8			
			^{194}Pt (*p*,*n*)	32·9			
2·3	^{74}Ga	7·8m					
2·32	^{72}As	26h	^{69}Ga (*α*,*n*)	60·2			D^{72}Se
			^{72}Ge (*p*,*n*)	27·37			
			^{72}Ge (*d*,2*n*)	27·37			
			^{74}Se (*d*,*α*)	0·87			
2·32	^{90}Nb	14·60h	^{90}Zr (*d*,2*n*)	51·46			D^{90}Mo
			^{90}Zr (*p*,*n*)	51·46			
			^{92}Mo (*d*,*α*)	15·86			
			^{92}Mo (*γ*,*pn*)	15·86			
2·32	^{105}Cd	55m	^{102}Pd (*α*,*n*)	0·96			
			^{107}Ag (*p*,3*n*)	51·35			
			^{106}Cd (*n*,2*n*)	1·22			
2·32	^{136}I	86s	^{235}U (*n*,*f*)		3·1%		
2·35	^{92m_1}Nb	13h	^{93}Nb (*p*,*pn*)	100			
2·35	^{136}Cs	12·9d	^{135}Cs (*n*,*γ*)	†	13 ± 4*		
			^{139}La (*n*,*α*)	99·911			
2·36	^{210}Tl (RaC″)	1·32m					D^{214}Bi (RaC) P^{210}Pb (RaD)
2·37	^{106}Rh	30s					D^{106}Ru
2·379	^{100}Rh	20·8h	^{99}Ru (*d*,*n*)	12·7			D^{100}Pd
			^{100}Ru (*d*,2*n*)	12·7			
			^{100}Ru (*p*,*n*)	12·7			
2·40	^{66}Ga	9·45h	^{63}Cu (*α*,*n*)	69·1			D^{66}Ge
			^{66}Zn (*d*,2*n*)	27·81			
			^{66}Zn (*p*,*n*)	27·81			
2·40	^{88}Kr	2·77h	^{87}Kr (*n*,*γ*)		<600		P^{88}Rb D^{88}Br
2·4	^{92}Y	3·60h	^{92}Zr (*n*,*p*)	17·11			D^{92}Sr
			^{94}Zr (*d*,*α*)	17·40			
2·4	^{140}La	77m					D^{141}Ba
2·43	^{29}P	4·45s	^{29}Si (*p*,*n*)	4·71		~0·2	
2·43	^{29}Al	6·56m	^{26}Mg (*α*,*p*)	11·29		15	
2·432	^{214}Bi (RaC)	19·7m					D^{214}Pb (RaB) D^{218}At P^{214}Po(RaC′) P^{210}Tl(RaC″)
2·47	^{84}Br	31·8m	^{87}Rb (*n*,*α*)	27·85			

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2·48	^{44}K	22·0m	^{44}Ca (n,p)	2·06			
2·49	^{136}Cs	12·9d	^{135}Cs (n,γ)	†	13 ± 4*		
			^{139}La (n,α)	99·911			
2·491	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn$-\beta^-$				
2·50	^{140}La	40·22h	^{139}La (n,γ)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (d,p)	99·911			
			^{140}Ce (n,p)	88·48			
2·5	^{62}Co	13·9m	^{62}Ni (n,p)	3·66			
2·508	^{72}Ga	14·3h	^{71}Ga (n,γ)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (d,p)	39·8			
			^{72}Ge (n,p)	27·37			
			^{72}Zn$-\beta^-$				
2·51	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
2·51	^{112}Ag	3·20h	^{112}Cd (n,p)	24·07			D^{112}Pd
			^{113}Cd (γ,p)	12·26			
			^{115}In (n,α)	95·77			
2·54	^{44}Sc	3·92h	^{41}K (α,n)	6·91		0·12	D^{44}Ti
			^{45}Sc ($n,2n$)	100			
			^{43}Ca (d,n)	0·145			
			^{44}Ca (p,n)	2·06			
2·56	^{56}Co	77·3d	^{56}Fe ($d,2n$)	91·68			D^{56}Ni
			^{58}Ni (γ,pn)	67·76			
			^{54}Fe (α,np)	5·84			
2·57	^{87}Kr	78m	^{86}Kr (n,γ)	17·37	60 ± 20mb		D^{87}Br
			^{86}Kr (d,p)	17·37			
			^{87}Rb (n,p)	27·85			
2·59	^{88}Rb	15·4m	^{85}Rb (n,γ)	†	1·0 ± 0·2		D^{88}Kr P^{88}Sr
2·60	^{205}Bi	14·5d				0·3	D^{205}Po D^{209}At P^{205}Pb
2·60	^{63}Zn	38·3m	^{63}Cu ($d,2n$)	69·1		~0·5	
			^{63}Cu (p,n)	69·1			
			^{64}Zn (γ,n)	48·89			
			^{64}Zn ($n,2n$)	48·89			
2·6(?)	^{28}P	0·28s					
2·6	^{210}At	8·3h	^{209}Bi ($\alpha,3n$)	100		Very weak	P^{210}Po P^{206}Bi

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2·61	^{138}I	86s	^{235}U (n,f)		3·1%		
2·61	^{208}Bi	~3 × 10^{4}y	^{208}Pb ($d,2n$)	52·3			
2·62	^{208}Tl (ThC″)	3·10m				~100	D^{212}Bi (ThC)
2·63(?)	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
2·63	^{106}Ag	8·2d	^{103}Rh (α,n)	100			
			^{105}Pd (d,n)	22·2			
			^{106}Pd (p,n)	27·3			
			^{107}Ag ($n,2n$)	51·35			
2·63	^{138}Cs	32·2m	^{138}Ba (n,p)	71·66		9	D^{138}Xe
			^{137}Cs (n,γ)	†	< 2		Descendant ^{138}I
2·64	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		5·5	D^{60}Zn
			^{60}Ni ($d,2n$)	26·16			
			^{58}Ni (α,pn)	67·76			
2·65	^{78}As	91·0m	^{81}Br (n,α)	49·48		0·02	D^{78}Ge
			^{78}Se (n,p)	23·52			
2·66	^{106}Rh	30s					D^{106}Ru
2·68	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
2·7	^{93m}Tc	43·5m	^{92}Mo (d,n)	15·86			
2·73	^{94}Tc	53m	^{94}Mo (p,n)	9·12			D^{94}Ru
			^{94}Mo ($d,2n$)	9·12			
2·73	^{24}Al	2·1s	^{24}Mg (p,n)	78·6			
2·75	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
2·75	^{89}Rb	15·4m	^{88}Rb (n,γ)	†	1·0 ± 0·2		D^{89}Kr P^{89}Sr
2·75	^{150}Pm	2·7h	^{150}Nd (p,n)	5·60			
2·75	^{40}Cl	1·4m					
2·754	^{24}Na	14·97h	^{23}Na (n,γ)	100	536 ± 10mb		
2·76(?)	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
2·76	^{88}Y	104d	^{88}Sr ($d,2n$)	82·56			D^{88}Zr
			^{88}Sr (p,n)	82·56			
			^{89}Y ($n,2n$)	100			

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2·79	^{112}Ag	3·20h	^{112}Cd (*n,p*)	24·07			D^{112}Pd
			^{113}Cd (*γ,p*)	12·26			
			^{115}In (*n,α*)	95·77			
2·8	^{74}Ga	7·8m				Weak	
2·82	^{84}Br	31·8m	^{87}Rb (*n,α*)	27·85			
2·827	^{72}Ga	14·3h	^{71}Ga (*n,γ*)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d,p*)	39·8			
			^{72}Ge (*n,p*)	27·37			
			^{72}Zn^{-}*β*$^{-}$				
2·84	^{136}I	86s	^{235}U (*n,f*)		3·1%		
2·9	^{140}La	77m					D^{142}Ba
2·9	^{33}Cl	2·8s	^{32}S (*d,n*)	95·018		0·3	
			^{33}S (*p,n*)	0·750			
2·91	^{72}As	26h	^{69}Ga (*α,n*)	60·2			D^{72}Se
			^{72}Ge (*p,n*)	27·37			
			^{72}Ge (*d,2n*)	27·37			
			^{74}Se (*d,α*)	0·87			
2·96	^{26}Al	8 × 10^{5}y	^{23}Na (*α,n*)	100		0·3	
			^{26}Mg (*p,n*)	11·29			
			^{26}Mg (*p,γ*)	10·11			
			^{27}Al (*γ,n*)	100			
2·98	^{56}Co	77·3d	^{56}Fe (*d,2n*)	91·68			D^{56}Ni
			^{58}Ni (*γ,pn*)	67·76			
			^{54}Fe (*α,np*)	5·84			
3·0	^{72}As	26h	^{69}Ga (*α,n*)	60·2			D^{72}Se
			^{72}Ge (*p,n*)	27·37			
			^{72}Ge (*d,2n*)	27·37			
			^{74}Se (*d,α*)	0·87			
3·00	^{140}La	40·22h	^{139}La (*n,γ*)	99·911	8·2 ± 0·8		D^{140}Ba
			^{139}La (*d,p*)	99·911			
			^{140}Ce (*n,p*)	88·48			
~3	^{87}Br	55·6s	^{74}Se (*α,p*)	0·87			P^{87}Kr
			^{76}Se (*d,n*)	9·02			P^{86}Kr (2% of Disintegrations)
3·01	^{88}Rb	17·8m	^{87}Rb (*n,γ*)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (*d,p*)	27·85			
			^{88}Sr (*n,p*)	82·56			
3·03	^{84}Br	31·8m	^{87}Rb (*n,α*)	27·85			
3·086	^{72}Ga	14·3h	^{71}Ga (*n,γ*)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d,p*)	39·8			
			^{72}Ge (*n,p*)	27·37			
			^{72}Zn^{-}*β*$^{-}$				

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3·09	^{37}S	5·04m	^{36}S (*n*,*γ*)	0·017	0·14 ± 0·04		
			^{37}Cl (*n*,*p*)	24·47			
3·10	^{49}Ca	8·8m	^{48}Ca (*n*,*γ*)	0·185	1·1 ± 0·1		
			^{48}Ca (*d*,*p*)	0·185			
3·13	^{60}Cu	23·4m	^{60}Ni (*p*,*n*)	26·16		3·7	D^{60}Zn
			^{60}Ni (*d*,2*n*)	26·16			
			^{58}Ni (*α*,*pn*)	67·76			
3·18	^{136}I	86s	^{235}U (*n*,*f*)		3·1%		
3·22	^{34m}Cl	32·40m	^{31}P (*α*,*n*)	100			P^{34}Cl
			^{34}S (*p*,*n*)	4·215			
			^{33}S (*d*,*n*)	0·750			
3·24	^{88}Rb	17·8m	^{87}Rb (*n*,*γ*)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (*d*,*p*)	27·85			
			^{88}Sr (*n*,*p*)	82·56			
3·24	^{66}Ga	9·45h	^{63}Cu (*α*,*n*)	69·1			D^{66}Ge
			^{66}Zn (*d*,2*n*)	27·81			
			^{66}Zn (*p*,*n*)	27·81			
3·25	^{64}Ga	2·6m	^{64}Zn (*p*,*n*)	48·89			
			^{64}Zn (*d*,2*n*)	48·89			
3·25	^{56}Co	77·3d	^{56}Fe (*d*,2*n*)	91·68			D^{56}Ni
			^{58}Ni (*γ*,*pn*)	67·76			
			^{54}Fe (*α*,*np*)	5·84			
3·27	^{94}Tc	53m	^{94}Mo (*p*,*n*)	9·12			D^{94}Ru
			^{94}Mo (*d*,2*n*)	9·12			
3·28	^{84}Br	31·8m	^{87}Rb (*n*,*α*)	27·85			
3·34	^{138}Cs	32·2m	^{138}Ba (*n*,*p*)	71·66		0·5	D^{138}Xe
			^{137}Cs (*n*,*γ*)	†	< 2		Descendant ^{138}I
3·350	^{72}Ga	14·3h	^{71}Ga (*n*,*γ*)	39·8	4·0 ± 0·7		D^{72}Zn
			^{71}Ga (*d*,*p*)	39·8			
			^{72}Ge (*n*,*p*)	27·37			
			^{72}Zn$-\beta^-$				
3·4	^{140}La	77m					D^{140}Ba
3·41	^{66}Ga	9·45h	^{63}Cu (*α*,*n*)	69·1			D^{66}Ge
			^{66}Zn (*d*,2*n*)	27·81			
			^{66}Zn (*p*,*n*)	27·81			
3·47	^{56}Co	77·3d	^{56}Fe (*d*,2*n*)	91·68			D^{56}Ni
			^{58}Ni (*γ*,*pn*)	67·76			
			^{54}Fe (*γ*,*np*)	5·84			
3·5	^{39}Ca	0·66s					
3·52	^{89}Rb	15·4m	^{88}Rb (*n*,*γ*)	†	1·0 ± 0·2		D^{89}Kr P^{89}Sr

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3·52	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
3·52	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		2·0	D^{60}Zn
			^{60}Ni ($d,2n$)	26·16			
			^{58}Ni (α,pn)	67·76			
3·6(?)	^{44}K	22·0m	^{44}Ca (n,p)	2·06			
3·68	^{88}Rb	17·8m	^{87}Rb (n,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (d,p)	27·85			
			^{88}Sr (n,p)	82·56			
3·74	^{72}As	26h	^{69}Ga (α,n)	60·2			D^{72}Se
			^{72}Ge (p,n)	27·37			
			^{72}Ge ($d,2n$)	27·37			
			^{74}Se (d,α)	0·87			
3·75	^{40}Sc	0·22s					
3·78	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
3·79(?)	^{32}Cl	0·306s				~10	
3·93	^{84}Br	31·8m	^{87}Rb (n,α)	27·85			
4·0	^{34}P	12·4s	^{34}S (n,p)	4·215		0·2	
			^{37}Cl (n,α)	24·47			
4·0	^{60}Cu	23·4m	^{60}Ni (p,n)	26·16		1·1	D^{60}Zn
			^{60}Ni ($d,2n$)	26·16			
			^{58}Ni (α,pn)	67·76			
4·05	^{49}Ca	8·8m	^{48}Ca (n,γ)	0·185	1·1 ± 0·1		
			^{48}Ca (d,p)	0·185			
4·12	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
4·2	^{24}Al	2·1s	^{24}Mg (p,n)	78·6			
4·27	^{32}Cl	0·306s				7	
4·33	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			
4·44	^{28}P	0·28s				10	
~4·5	^{12}B	0·019s	^{14}C (d,α)	†			
			^{15}N (n,α)	0·365			
4·68	^{49}Ca	8·8m	^{48}Ca (n,γ)	0·185	1·1 ± 0·1		
			^{48}Ca (d,p)	0·185			
4·77	^{32}Cl	0·306s				14	
4·83	^{66}Ga	9·45h	^{63}Cu (α,n)	69·1			D^{66}Ge
			^{66}Zn ($d,2n$)	27·81			
			^{66}Zn (p,n)	27·81			

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4·87	^{88}Rb	17·8m	^{87}Rb (*n*,γ)	27·85	0·12 ± 0·03		D^{88}Kr
			^{87}Rb (*d*,*p*)	27·85			
			^{88}Sr (*n*,*p*)	82·56			
4·93(?)	^{28}P	0·28s					
5·3	^{15}C	2·25s	^{14}C (*d*,*p*)	†			
5·4	^{24}Al	2·1s	^{24}Mg (*p*,*n*)	78·6			
5·4	^{87}Br	55·6s	^{74}Se (α,*p*)	0·87			P^{87}Kr
			^{76}Se (*d*,*n*)	9·02			P^{86}Kr (2% of Disintegrations)
6·0	^{40}Cl	1·4m					
6·1	^{28}P	0·28s					
6·13	^{16}N	7·35s	^{15}N (*n*,γ)	0·365	24 ± 8μb		
			^{15}N (*d*,*p*)	0·365			
			^{16}O (*n*,*p*)	99·759			
6·7	^{28}P	0·28s					
7·0	^{28}P	0·28s					
7·10	^{16}N	7·35s	^{15}N (*n*,γ)	0·365	24 ± 8μb		
			^{15}N (*d*,*p*)	0·365			
			^{16}O (*n*,*p*)	99·759			
7·1	^{24}Al	2·1s	^{24}Mg (*p*,*n*)	78·6			
7·6	^{28}P	0·28s				0·5	
8·88	^{16}N	7·35s	^{15}N (*n*,γ)	0·365	24 ± 8μb		
			^{15}N (*d*,*p*)	0·365			
			^{16}O (*n*,*p*)	99·759			

* Pile Neutrons † Artificially Active ‡ Naturally Active

QC Slater, David Neville
794 Gamma-rays of radionuclides
S58 in order of increasing energy

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